The Iron Age

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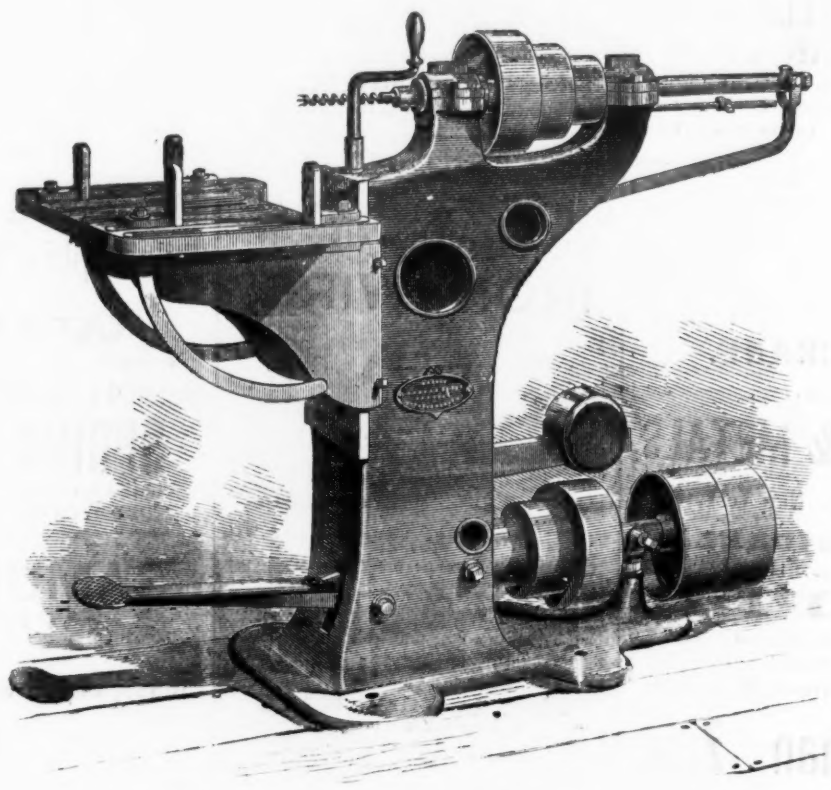
An Improved Universal Boring Machine.

We present herewith an illustration of an improved universal wood boring machine, lately introduced by Messrs. Bentel, Margedant & Co., of Hamilton, Ohio. It is strongly built of iron and steel, and combines, in the small space it occupies, nearly all the facilities needed for boring large and small holes in any desired angle. It is cast with a heavy solid frame and body, and has two cone pulleys with three faces, for giving the mandrel the proper speeds for different sized bits. The maudrel, which is of steel, is made to traverse by a foot lever. The operator can adjust the leverage in a moment, so as to stop at any desired depth up to 11 inches. The adjustable table has a surface of 21 inches in width with 15 inches slide, and it can be raised or lowered 16 inches, enabling one to bore in the center of 32 inches. Adjustable rests upon the table enables the work to be readily placed at any desired angle in the horizontal plane, while the table top itself can be set on an incline toward the bit to any angle not exceeding 45°, and the same can be raised or lowered, and slid forward or back, preserving the inclination given.

Augers and machine and pod bits of the various sizes can be employed, as an adjustable chuck is fitted to the mandrel for holding the same. The levers are in the inside of the machine, where they are protected, and where no dust and shavings can obstruct their movements. There is no spring connected with these parts to impart return motion, which requires a greater amount of pressure at this point of the operation than is needed to secure a smoothly finished hole.

The machine is thus always ready for doing either light or heavy boring at any angle desired with ease, and, it is claimed, with great rapidity. It is claimed that, on machines or devices where the stuff has to be moved up to the auger, there is a liability of twisting, of making a crooked hole, and of breaking the bit, especially if knotty or cross-grained material be used; and that the expense of bits would, in a short time, amount to the cost of the present invention.

The countershafts attached to the machine rests in adjustable boxes, and has a tight and loose pulley of eight inches diameter and three and a half inches face, and should make 900 revolutions per minute.



THE UNIVERSAL BORING MACHINE.

Property in Patterns for Metal Castings.

The following is a copy of Senate bill No. 119, "For the better security of property in patterns for metal castings," introduced by Mr. Summer on the 9th of December, read twice, referred to the Committee on Patents, and ordered to be printed:

Be it Enacted, etc.

That no person shall counterfeit or make a *fac-simile* of any metal casting, by using such casting as a pattern in molding, unless by the written consent of the owner or producer of the original pattern from which the casting was made; and any person who shall counterfeit or make a *fac-simile* of any metal casting, either in whole or in part, by the means aforesaid, without the consent of the owner, shall be liable to such producer or owner of the original pattern in the amount of the ordinary wholesale profits upon the articles so produced, recoverable, with costs, by bill in equity, in any circuit court of the United States, and the court may restrain by injunction, and may order that all counterfeit metal patterns, and the metal products therefrom, shall be delivered to the complainant or be destroyed by the marshal, and may pass such further orders and decrees as may be meet in the premises.

We are informed that a clause is to be added to this bill before it is reported by the Committee on Patents, exempting from the penalties it prescribes, those who may obtain or cause to be made, duplicates of metal castings for their own use, when needed for repairs, etc.

The Legal Effect of the Registration of Trade Marks.

BY ROWLAND COX.

I have observed in my practice in trade mark cases, and from intercourse with parties particularly interested in subjects of a similar nature, that misconceptions so pronounced and wide spread exist, that I venture to put in writing a few ideas which, although trite to many, might be read with advantage by a large proportion of the American public, and which, if understood, would certainly tend to do away with what it is not ungenerous to call the most unnecessary ignorance.

The law of trade marks appears to be imperfectly understood by a large proportion of the legal profession, while to the public it is, in the worst sense, enigmatical. The above is especially true in respect to the act of Congress of July 8, 1870, the nature and effect of which is totally misapprehended. It is only necessary to glance at any of the American journals devoted to manufacturing interests to discover the erroneous notions that prevail. Attached to *fac-similies* of registered marks are found, in nearly every instance, the word "*patented*," giving the date of registration with the same formality as in cases of patented articles, thus very conclusively disclosing that the impression prevails that the act provides for "*patenting*" *a trade mark*. So positive is this impression that it obtains to not a limited extent among the members of the bar, and there are instances where parties owning trade marks that have been registered, acting upon legal advice, have been deterred from prosecuting infringers solely because the word "patented" had not been attached to the mark. It may be safely stated that the public supposes that a compliance with the terms of the act alluded to results in the issue of a grant that is tantamount to letters patent.

This impression is not only wholly erroneous, but is calculated to produce very unfortunate consequences, and to materially impair the object of the act as well as the interests of those who take advantage of it.

To apprehend the true scope and effect of the statute, it is essential to bear in mind that it does not even purport to prejudice any common law right. On the contrary, it specifically provides that nothing that it contains shall be construed to lessen or impair the validity of any mark that may be used without being registered. Thus there can be no question that *the act in no manner affects such marks as are not registered.* If it did it would be obviously unconstitutional. And it is, also, to be observed, that its provisions look to the registration only of "*lawful*" marks, thus recognizing that Congress has no creative powers in the premises whatever.

We find, therefore, in the statute itself a recognition of a fact that it was not possible to gainsay, that trade marks exist at common law, and that, if they possess the qualities of lawful marks, they are susceptible of full protection without the aid of statutory enactment. That is to say, the owner of a trade mark may protect it in the same manner as any other right of property which he is lawfully entitled to enjoy. This ownership in the premises is recognized by the courts of every civilized nation. In England it has been recognized since the sixteenth century, and in other countries it may be traced to even more remote periods.

The true conception is that a trade mark is a *commercial signature* which is as sacred as the sign manual of its owner. He attaches it as his *commercial name* to signify that the article was made by or for him, and that he is responsible, in a moral sense, for its quality and characteristics. To realize this view is to simplify the whole subject and to bring to the mind a complete apprehension of its incidents, which appear to be almost as intelligible to the unprofessional man as to the lawyer.

A manufacturer or dealer, therefore, who uses any lawful trade mark, *whether it be registered or not*, may protect it in the same manner as any other right of property. He owns it as much as he does the article to which he attaches it, the only difference being that the larceny of the one is a public and that of the other a private wrong. With these important facts before him, it is not difficult for the reader to pursue an inquiry as to the object and effect of the act of July 8, 1870, and the nature of the certificate that is issued by the commissioner of patents upon a compliance with its provisions.

As has been intimated, a strict constructionist might find good reason to doubt the constitutionality of the act, owing to the nature of the questions toward which it inevitably leads. But it is probable that, inasmuch as it does not attempt to create a right, it is not beyond the purview of the organic law. It does not purport to do more than enhance the qualities of a mark, and is, therefore, not liable to the objections that would be fatal if it attempted to authorize an original grant.

The chief advantages that it bestows, are, first, that it insures the right to protect the mark that is registered in the courts of certain foreign countries that formerly refused protection to any but their own citizens or subjects. *Second*, It enables the owner of the mark to proceed in the United States courts where all the parties reside in the same State. *Third*, It probably affords very strong presumptions as to title to the mark and its legality.

In addition to these advantages, the registration is in the nature of notice; and, while adding to the moral weight of the mark, strengthens the position of the suitor by compelling the conviction that he has sought to protect himself to the full extent of his opportunities.

The above may be mentioned as the principal reasons for the registration of trade marks, although there are others that seem to indicate that it is expedient for extensive manufacturers and dealers to avail themselves of the benefits it offers.

When the terms of the act are complied with, a certificate is issued, setting forth that the applicant having complied with the law, his mark has been registered, and he will be entitled to the benefits of the act for thirty years, and that he may renew the certificate if he so elects.

This certificate is, practically, without a single element of a grant, and in no sense what is commonly known as a "patent." It is a certificate of registration—no less and no more. It is not even conclusive evidence that the terms of the statute have been complied with, for a court will go behind the seal of the commissioner. And for this reason the certificate does not constitute, in itself, a *prima facie* case, the suitor being required to produce the proofs upon which it was issued.

Said Judge Blatchford, in the case of Smith vs. Reynolds:

"In respect to a trade-mark, the statute does not authorize the commissioner of patents to issue any letters patent therefor, or to issue any certificate containing a grant thereof. The only certificate he is authorized to issue in reference to the original registration of a trade mark, is that provided for by section 80, which enacts as follows: 'The time of the receipt of any trade mark at the patent office for registration shall be noted and recorded, and copies of the trade mark and of the date of the receipt thereof, and of the statement filed therewith, under the seal of the patent office, certified by the commissioner, shall be evidence in any suit in which such trade mark shall be brought in controversy.' A certified copy of the trade mark, of the date of its receipt, of the statement filed therewith—that is, a copy of everything filed and recorded, and of the memorandum of the date of the receipt thereof—is made evidence. But such copy is evidence only that what is shown by it to have been filed was filed. The certificate of the commissioner, that the parties 'otherwise complied' with the act, can not be substituted for the judgment which a court must pass as to whether there was a declaration filed, and one under oath, and one complying, as to its contents, with the statute. The court is to judge from the 'statement' whether the requirements of recording 'the class of merchandise and the particular description of goods comprised in such class, by which the trade mark has been or is intended to be appropriated,' have been complied with, and whether the requirement of recording a description of the mode in which the trade mark 'has been or is intended to be applied and used' was complied with. So it is equally for the court to judge whether the requirement as to the filing of the proper declaration was complied with. The general certificate of the commissioner can not be taken as evidence on the subject."

But upon the expiration of the certificate what is the position of the party who has registered? Clearly his trade mark is as valid at common law as it would have been had no certificate been issued, and he loses only those advantages that pertained to the registration when it was made. Thus, notwithstanding the determination of the registration, the mark remains undivested of its most essential qualities, and susceptible of all the protection that pertains to a trade mark at common law.

It is obvious, therefore, that to associate the certificate with letters-patent is to confound a statutory privilege with a common law right. It is equally clear that to attach the word "patented" to a mark is, not only not necessary to the enforcement of the statutory remedy, but a manifestation of an entire misconception of the law.

To fully apprehend the nature of the law of trade marks, it is, as has been stated above, only necessary to realize that a trade-mark is a commercial signature differing alone from a sign manual in the remedies that are adopted to insure its enjoyment.

As a means of protection it is the best that can be adopted, especially because of its being perpetual. Its importance can scarcely be over estimated, but unless its nature be fully realized it is likely to lead to litigation of the most vexatious character. There can be no good reason why the law relating to it should be misunderstood by the public. The rulings of the past constitute a simple code of ethics—the purest equity and nothing more. The animus of this code is conscience, which, in this branch of the law as everywhere, the courts will jealously foster and sustain.

It is possible they may look with more favor upon the diligent party who has made registration, but if they have jurisdiction they will not deny to any one the enforcement of a right which has been undisputed ever since the close of the sixteenth century.

WASHINGTON, D. C., January 15, 1874.

The following is the portion of the Act of July 8, 1870, relating to trade-marks:

SEC. 77. *And be it further enacted*, That any person or firm domiciled in the United States, and any corporation created by the authority of the United States, or of any State or Territory thereof, and any person, firm or corporation resident of or located in any foreign country which by treaty or convention affords similar privileges to citizens of the United States, and who are entitled to the exclusive use of any lawful trade-mark, or who intend to adopt and use any trade mark for exclusive use within the United States, may obtain protection for such lawful trade-mark by complying with the following requirements, to wit:

First—By causing to be recorded in the patent office the names of the parties and their residences and place of business, who desire the protection of the trade-mark.

Second—The class of merchandise and the particular description of goods comprised in such class, by which the trade-mark has been or is intended to be appropriated.

Third—A description of the trade-mark itself, with *fac similes* thereof, and the mode in which it has been or is intended to be applied and used.

Fourth—The length of time, if any, during which the trade-mark has been used.

Fifth—The payment of a fee of twenty-five dollars, in the same manner and for the same purpose as the fee required for patents.

Sixth—The compliance with such regulations as may be prescribed by the commissioner of patents.

Seventh—The filing of a declaration, under the oath of the person, or of some member of the firm, or officer of the corporation, to the effect that the party claiming protection for the trade-mark has a right to the use of the same, and that no other person, firm, or corporation has the right to such use, either in the identical form or having such near resemblance thereto as might be calculated to deceive, and that the description and *fac similes* presented for record are true copies of the trade-mark sought to be protected.

SEC. 78. *And be it further enacted*, That such trade-mark shall remain in force for thirty years from the date of such registration, except in cases where such trade mark is claimed for and applied to articles not manufactured in this country, and in which it receives protection under the laws of any foreign country for a shorter period, in which case it shall cease to have any force in this country by virtue of this act at the same time that it becomes of no effect elsewhere, and during the period that it remains in force it shall entitle the person, firm or corporation registering the same to the exclusive use thereof, so far as regards the description of goods to which it is appropriated in the statement filed under oath as aforesaid, and no other person shall lawfully use the same trade-mark, or substantially the same, or so nearly resembling it as to be calculated to deceive, upon substantially the same description of goods: *Provided*, That six months prior to the expiration of said term of thirty years, application may be made for a renewal of such registration, under regulations to be prescribed by the commissioner of patents, and the fee for such renewal shall be the same as for the original registration. Certificate of such renewal shall be issued in the same manner as for the original registration, and such trade-mark shall remain in force for a further term of thirty years: *And provided further*, That nothing in this section shall be construed by any court as abridging, or in any manner affecting unfavorably, the claim of any person, firm, corporation or company to any trade-mark after the expiration of the term for which such trade-mark was registered.

SEC. 79. *And be it further enacted*, That any person or corporation who shall reproduce, counterfeit, copy or imitate any such recorded trade-mark, and affix the same to goods of substantially the same descriptive properties and qualities as those referred to in the registration, shall be liable to an action in the case for damages for such wrongful use of said trade-mark, at the suit of the owner thereof, in any court of competent jurisdiction in the United States, and the party aggrieved shall also have his remedy according to the course of equity to enjoin the wrongful use of his trade mark, and to recover compensation therefor in any court having jurisdiction over the person guilty of such wrongful use. The commissioner of patents shall not receive and record any proposed trade mark which is not, and cannot become, a lawful trade-mark, or which is merely the name of a person, firm or corporation only, unaccompanied by a mark sufficient to distinguish it from the same name when used by other persons, or which is identical with a trade-mark appropriate to the same class of merchandise, and belonging to a different owner, and already registered or received for registration, or when so nearly resembles such last mentioned trade-mark as to be likely to deceive the public: *Provided*, That this section shall not prevent the registry of any lawful trade-mark rightfully used at the time of the passage of this act.

SEC. 80. *And be it further enacted*, That the time of the receipt of any trade-mark at the patent office for registration shall be noted and recorded, and copies of the trade-mark, and of the date of the receipt thereof, and of the statement filed therewith, under the seal of the patent office, certified by the commissioner, shall be evidence in any suit in which such trade-mark shall be brought in controversy.

SEC. 81. *And be it further enacted*, That the commissioner of patents is authorized to make rules, regulations, and prescribe forms for the transfer of the right to the use of such trade-marks, conforming, as nearly as practicable, to the requirements of law respecting the transfer and transmission of copyrights.

SEC. 82. *And be it further enacted*, That any person who shall procure the registry of any trade-mark, or of himself as the owner thereof, or an entry respecting a trade-mark, in the patent office under this act, by making any false or fraudulent representations or declarations, verbally or in writing, or by any fraudulent means, shall be liable to pay damages in consequence of any such registry or entry to the person injured thereby, to be recovered in an action on the case before any court of competent jurisdiction within the United States.

SEC. 83. *And be it further enacted*, That nothing in this act shall prevent, lessen, impeach, or avoid any remedy at law or in equity, which any party aggrieved by any wrongful use of any trade-mark might have had if this act had not been passed.

SEC. 84. *And be it further enacted*, That no action shall be maintained under the provisions of this act by any person claiming the exclusive right to any trade-mark which is used or claimed in any lawful business, or upon any article which is injurious in itself, or upon any trade-mark which has been fraudulently obtained, or which has been formed and used with the design of deceiving the public in the purchase or use of any article of merchandise.

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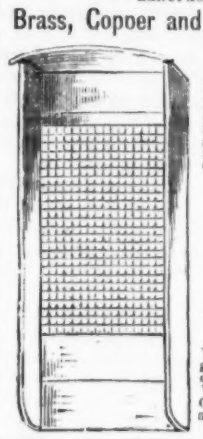
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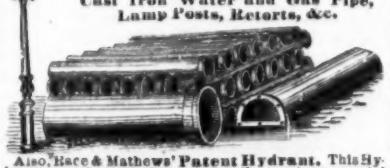
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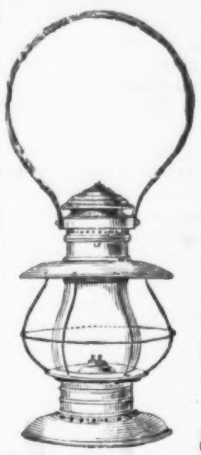
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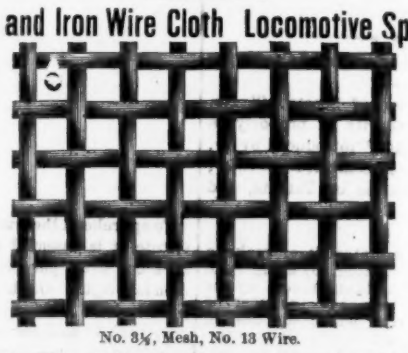
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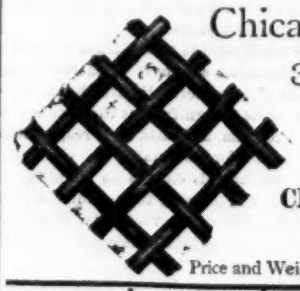
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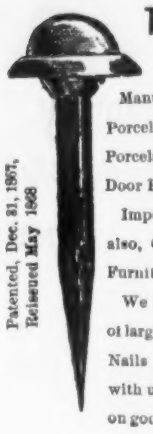
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12	2.10	26	13	1.85	25	14	1.62	25	16	1.51	25	18	1.11	20	20	0.76	20
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Hon. Daniel J. Morrell on the Financial Situation.

The following extracts from a letter from Hon. Daniel J. Morrell, of the Cambria Iron Co., to Senator Scott, will be read with interest:

As a direct consequence of the refusal to remove the restrictions upon the currency, the country has just passed through a most destructive financial crisis, which has caused great loss of accrued wealth, an inestimable waste of productive force, and has indefinitely postponed the resumption of specie payments. The necessity of governmental interference is seen by everybody: the President of the United States and the Secretary of the Treasury desire that something may be done to render the currency more flexible, and this is the principal object of the numerous financial bills already presented to Congress.

The press is still divided in opinion, and quite an influential section demands an instant return to specie payments, and denounces all measures intended to give immediate relief to the business interests of the country. Those who entertain these opinions should consider that our present troubles may be the result of governmental interference. The government having monopolized the function of supplying the currency has limited the amount, and the advocates of the let-alone policy should be able to prove that just enough has been furnished, that the needs of the country are no greater in 1874 than they were in 1868, and that while everything else changes, the amount of money in circulation should be always the same.

I believe that Congress will do nothing revolutionary, and that whatever financial relief it affords to the country will ultimately be given through agencies already established and by methods which have the sanction of experience. The most direct and least dangerous action that it can take will be to repeal the limit upon the circulation of the national banks, and allow all new associations organized under the law to obtain the use of currency. This measure has been quite generally demanded by the people, who regard with extreme disfavor the grant of exclusive privileges now possessed by the banks, which they rightly denounce as an unjustifiable monopoly.

The revision of the banking laws need cause but little debate, and it may, as I think, be made to give immediate relief to the country, and to aid in refunding the debt in consols bearing a low rate of interest. I have heretofore advocated the consolidation of the debt of the United States in an irredeemable bond bearing interest at the rate of 3·65 per cent. per annum, which should be the sole basis of banking, and I still believe that such a measure might be made successful. In addition to its general uses, this loan would have a general utility because it would always be at par with the currency, to which it might readily be made to impart the quality of flexibility now deemed so desirable.

The popular plan of making the currency flexible, may be practicable, but has such novel features that it will hardly be adopted. It proposes to create and issue government bonds bearing a low rate of interest, and that these bonds and currency shall be exchangeable in any amount at the treasury of the United States and its agencies. The theory is, that when money is too plentiful and there is no demand for it in legitimate business, it would be temporarily invested in these bonds, which would be held until money became scarce, when the bonds would be returned to the treasury and exchanged for currency. The government is made to borrow money when nobody else wants it, to keep it from becoming mischievous, and to pay interest upon it, while making no use of it.

This simple and attractive scheme would encounter in practice the difficulty to which all similar methods must be liable. Those who in tight times would need money badly, would never have the bonds to exchange for it. They would not be held by business men, who must rely upon the banks for accommodation, and I would, by using the banks, dispense with all other machinery.

The late panic demonstrated the strength and usefulness of the national banking system, and there would have been no panic if the entire banking business of the country had been conducted under it, subject to such restrictions as would have prevented the banks from making demand loans upon collaterals, and paying interest on deposits, two vices which have been more injurious than all other evil influence. These and other defects in the banking law may be remedied, some new checks should be devised, some useless restrictions removed, and thus improved the system should be made extensive with the business wants of the country.

Flexibility may be given to the currency in a general way by making the business of banking free, so that whenever money is needed and can be safely and profitably employed, banks may be established, with such amount of circulating notes as they wish to use. This would regulate broadly in accordance with the law of demand and supply the whole volume of the currency. Banks would be established where a lack of such accommodations as they afford would be felt, and if there got to be too many of them and they did not pay, they would wind up their affairs and go out of business.

In a more special way they could and should be enabled to relieve any temporary stringency by the proper employment of their reserves. The importance of maintaining this feature of the system has been demonstrated by our late financial troubles, but the discretion should be vested in the Secretary of the Treasury, of allowing the banks to substitute temporarily for a definite portion of their reserves, bonds bearing 3 65-100 per cent. interest, which would effect a beneficial liberation of currency. This would make the banks all over the country agencies for the exchange of circulating notes for bonds, and the means of relief, from temporary or local emergencies, would be made accessible to the people.

These radical changes in the national banking system, herein suggested, should conciliate its worst enemies. Making the business free, removes at once the chief objection to it. The substitution as banking capital of 3 65-100ths bonds for fives and sixes will reduce the profits of the banks, and will be a saving to the government, by refunding immediately six hundred millions, and ultimately, perhaps, a thousand millions of debts, at this lower rate of interest.

The provisions of the existing law, allowing deposits in other banks, subject to draft at sight, to be counted as part of the bank reserve, should be repealed, and the payment of interest on deposits should be strictly prohibited. To ensure the effectiveness of these and other wholesome regulations, it will be necessary to prohibit private banks and State associations from enjoying privileges not accorded to the national banks.

The present time affords an excellent opportunity for introducing reforms which will have the sanction of popular approval. Confidence in private banking has been lost, and it is generally felt that the business should be subject to the control of law. For a time the security of investments will be more regarded than the promise of large profits.

The national banking system has not had a fair trial, owing to the limitations excluding it from the field which it should have occupied, and the people for the same reason have not enjoyed its full benefits. The plea for freedom has been made in many ways, and it cannot be much longer denied. Government abuses its powers when it refuses to supply a sufficient amount of money to conduct the business of the country. It is a monstrous wrong that labor, through all the walks of productive industry, should be unemployed and the laborers suffering, through no fault or mismanagement of their own, or of those who direct and control their interests, but because the government has stubbornly adhered to a financial policy which made panic possible and its consequences ruinous. The loss of the country through the waste of its productive forces of man and machinery amounts to millions of dollars daily. It is a present injury which must be remedied, even at the risk of shocking some hard-money theorists, who are determined to protract as long as possible this season of adversity.

The country needs more money, and there should be an orderly method of freely getting it. All established industries are embarrassed by the high rate of interest, which places them at a great disadvantage with respect to foreign competition. The resources of one large section of our country, the Southern States, are almost wholly undeveloped because of the want of capital. Useless limitations upon the volume of the currency have enabled speculators to control values, greatly to their advantage, and to the injury of the business community. It is from the desire of changing this, and with the belief that it may be changed, that I would advocate the following measures, which were in good part embodied in a bill introduced by me in the lower house of Congress on December 8, A. D, 1869, and advocated in a speech which will be found in the *Congressional Globe*, of March 11, 1870.

A new loan, bearing interest at the rate of 3·65 per cent per annum, equal in amount to the debt of the government, in which the debt is to be consolidated, and which is to be the sole basis of banking under the national banking law.

Removal of the limits upon bank circulation, making the business of banking free to all who comply with the laws regulating it.

Prohibition of payment of interest on deposits by banks and the making of call loans upon pledge of collaterals.

Granting to the Secretary of the Treasury the power of authorizing the banks in times of emergency to issue a definite portion of their reserves, substituting in its place bonds bearing 3·65 per cent. interest.

Such other reforms in the national banking systems as will remove every semblance of monopoly, impose wholesome restrictions, and insure its fitness to answer all the business needs of the country.

Punched and Drilled Boiler Plates.

As the relative advantages of punching and drilling boiler plates has lately been the subject of a good deal of discussion, the following letter from Mr. Inch, Chief Engineer U. S. N., to Mr. Allen, President of the Hartford Boiler Inspection and Insurance Co., will be found of interest:

NAVY DEPARTMENT,
BUREAU OF STEAM ENGINEERING,
WASHINGTON, D. C.

J. M. Allen, Pres't: DEAR SIR—Experiments recently made at the Navy Yard, Washington, upon the strength of riveted joints with drilled and punched holes, show an excess of strength of about six per cent. in favor of drilled plates over those with punched holes. Inasmuch, however, as the strain tending to produce rupture in the cross section through the diameter is only one-half that longitudinally or lengthwise of the cylinder, all holes may be punched save those on longitudinal seam without materially diminishing the strength. The holes should be punched from the paying side so that the smallest ends of the two holes will come together. Yours, &c.,

P. INCH, Chief Engineer, U. S. N.

Mr. F. A. H. La Rue, of Quebec, Canada, records, through his agent, J. Richardson Francis, of Swansea, Glamorgan, South Wales, certain improvements in the mode of treatment of iron ores and cupreous pyrites, so as to facilitate the separation therefrom, in whole or part, of quartz, shales, and silicious or other extraneous earthy matters and impurities. These ores are first pulverized and then roasted—the latter not being necessary in some cases—and subsequently heated with carbonaceous material or reducing gases, so as to insure at least a partial reduction of the iron ore, which is thus rendered magnetic; the resulting material is then passed through a magnetic or an electro magnetic machine, so that the ore is separated from the non-magnetic earthy residue; of course, in the case of copper pyrites, the copper ore and the iron so rendered magnetic are separated and eliminated in conjunction and combination.

Mr. C. Cochrane, of the Grange, Stowbridge, Worcester, England, has presented certain improvements in the treatment of pulverulent iron ores, which deserve notice. Small iron ore is agglomerated into masses, lumps, or bricks, so as to render it more suitable for being reduced in blast furnaces, and this is suitably effected by mixing it with clay, and then pressing, drying and calcining the composite material. If the ores are of a friable nature they are to be ground small preliminary to being so dealt with; or in the case of ores which are naturally of a sufficiently plastic or adhesive character, the binding material is omitted, the other stages of the process being the same.

Mr. W. H. Potts Scott, architect, of South Shields, Durham, has recently introduced a method for the superficial protection of metallic surfaces, by means of an improved protecting and anti-corrosive compound, formed by the admixture, in suitable and definite proportions, of coal tar, black varnish, wood naphtha, japan gold size, red lead, arsenic and Portland cement.

The British government has recently ordered $8000 worth of galvanized work from the Reynolds Iron Roofing Co. for the residence they are building at Washington for their minister there, a proceeding which a contemporary calls a "compliment to American manufacturers." It is just possible that the agents of the British government were desirous of having good roofing, and did not think of the "compliment."

An iron worker in Coatbridge, Scotland, named G. Garrett, has effected machinery for finishing metal tubes, by the provision of an additional pair of rollers, placed with their axes vertical, or at right angles to the ordinary horizontal rolls, for the tube to pass through immediately after issuing from the latter; the grooves of these first pair of rolls are formed with corners rounded off, or chamfered, and the same shape is given also by preference to the grooves of the second or additional (vertical) rolls.

Cleaning Water Mains.

The following description of the means employed in cleaning out the water mains supplying the city of Brisbane, Australia, will be of interest to all who are connected with public water works in this country. The main pipe supplying water to the city of Brisbane is 8 in. in diameter from the Enoggera storage reservoir for 5 miles, and 9 in. for 2¼ miles to the service reservoir in the city. Shortly after its completion it was found that, in consequence of the high temperature of about 70 deg. Fahr., and the small quantity of mineral salts, the interior of the pipe became covered with moss, especially for the first half-mile; and this, with the corrosion of the metal along the whole length, not only greatly diminished the quantity of water conveyed, but also deteriorated the quality, as portions of the incrustation became detached, and, floating down the main, caused much inconvenience to consumers, and even choked the service pipes. The scour valves, which had originally been placed at the lower points on the line of main, proved inadequate to the removal of the deposit, as it adhered to the surface of the iron, and therefore Mr. Sigley, the officer in charge of the works, suggested, in February 1872, to the Board of Water Works that it would be desirable to scour the interior of the main by the use of a machine to be propelled through by the pressure of the water. The subject being one of great importance, and involving much difficulty from the deficiency of precedents, several examinations were made of different parts of the main where it was accessible by the valves, and it was found that the incrustation was as much as 2 in. thick in parts of bottom of the pipes, and that for the whole length the metal was very rough from corrosion. Mr. Sigley having been authorised to carry out his suggestion, proceeded to construct a suitable machine for scraping the interior of the pipe, and after several experiments on different forms, completed a very efficient machine, tube, which consists of a central shaft of 1 in. gas 3 ft. 4 in. in length, with ferrule junction for the convenience of introduction into the openings of the main. Attached to this central shaft are a number of steel springs 1 in. wide, and 1-10th in. thick, inclined about 30 deg., so as to press on the sides of the pipe, and act both as scrapers, and to support the shaft in the center. At about equal intervals on the central shaft are fixed four pistons, each formed of a disc of India-rubber, one half in. thick, and supported in front by eight radiating plates, or flat arms, attached by hinge joints, so as to fold back on meeting any obstruction or irregularity of the internal surface of the main, any leakage of one piston under such circumstances being met by the other three, while circumference of each piston and its radiating plates also act in a very effectual manner to remove the softer deposit. For the insertion of the scraper, special castings have been fitted at intervals of about one mile in the main pipe, each having a plate bolted on, and covering an aperture 2¼ ft. long, and the same width as the diameter of the pipe. The object of having several openings is to afford convenient means of removing impurities, and allowing of short portions being cleaned without interfering with the supply to the city. The effect of the scraper has been very satisfactory, as it has increased the delivery of the main from 315,000 gallons per diem to 360,000, or an increase of 45,000 gallons per diem; while the quality of the water is so greatly improved that it is now used for manufacturing purposes, for which it was previously unfit through impurity.

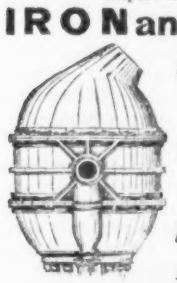
Report of Inspections Made by the Hartford Steam Boiler Inspection and Insurance Co., for October and November, 1873.—The number of visits made during these months was 2449, and the number of boilers inspected, 4919; of which inspections, 1441 were internal and entire. The hydraulic pressure was applied in 355 cases. The whole number of defects discovered was 2083, of which 555 were regarded as dangerous. These defects in detail were as follows: Furnaces out of shape, 80—14 dangerous. Fractures, 194—93 dangerous. Burned plates, 118—40 dangerous. Blistered plates, 314—52 dangerous. Deposit of sediment, 394 cases, of which 62 were regarded as dangerous. Cases of incrustation and scale, 355—26 dangerous. Cases of external corrosion, 127—37 dangerous. Internal corrosin, 88—24 dangerous. Internal grooving, 31—9 dangerous. Water gauges defective, 85—9 dangerous. Blow-out defective, 38—12 dangerous. Safety valve overloaded, 37—16 dangerous. Pressure gauges defective, 288—58 dangerously so. These variations were from —7 to +20. Boilers without gauges, 157—5 of these were run at high pressure. Deficiency of water, 23 cases, 5 dangerous. Braces and stays loose and broken, 102—49 dangerous. Boilers condemned, 28. Corrosion either internal or external has in many cases been found to be making great injury during these two months. In one case three boilers were found connected together by cast-iron pipe over the bridge wall. The joints in this pipe were made with copper gaskets. At the connection on No. 1, the shell around the flange was badly eaten by corrosion, and very thin. In another case eight soft patches of copper were found on a boiler. Flue boilers that had been long neglected, were found in bad condition—the flues being corroded entirely through. When boilers are not blown down frequently, impurities in the water become concentrated, and act very injuriously on the iron. The number of condemned boilers was unusually large, and they were in a dangerous condition, liable to accident at any moment.

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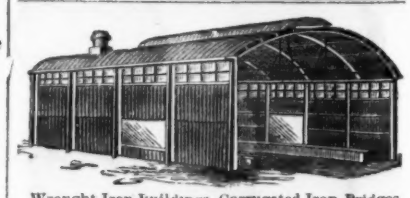
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SECOND FLOOR

New Patents.

We take from the records of the patent office at Washington the following specifications of certain patents lately issued, which will be found interesting:

IMPROVEMENT IN REFINING IRON AND STEEL.

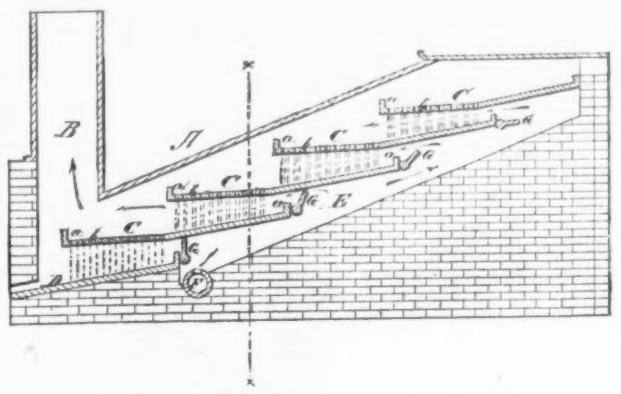
Specification forming part of Letters Patent No. 145,680, dated December 16, 1873, issued to Ira M. Phelps, of Philadelphia.

Figure 1 of the drawings is a representation of a longitudinal section of refiner. Fig. 2 is a transverse section of the same.

This invention has relation to the purification of metallic ores, or of pig iron, and to the conversion of iron into steel, by subjecting the same to the action of atmospheric air.

It consists, essentially, in a series of graduated perforated tablets or tiles, which are so arranged that the melted metal percolating through one tile will be received upon a succeeding lower one, and so on to the foot of the series, where it may be discharged into molds or other suitable receptacle, in combination with blasts of atmospheric air, which are forced through the falling streams of metal between the tiles, as will be hereinafter explained. The following is a description of the refiner:

A represents an inclined refining furnace, which communicates at its highest end with a suitable melting furnace, and which has a draft pipe or chimney, B, rising from its lower end. C, C, C, represent a series of tablets or tiles,



IMPROVED APPARATUS FOR REFINING IRON.—*Fig* 1.

which may be made of fire clay, asbestos, and silica, or other refractory substances, well tamped or pressed, so as to become very firm and hard. These tiles are provided with flanges *a*, to prevent the melted metal from flowing over their edges, and they are arranged one below the other, as shown in Fig. 1. The tiles are perforated, as shown at *b*, the holes through the first or highest tile being the largest, and are smaller and more numerous through each succeeding lower tile in the series. D represents the lowest tile, which is not perforated, and from which the metal is drawn off into molds or other suitable receptacles. E represents a chamber below all of the perforated tiles, into which air is introduced through a pipe, F. G G represents valves, which are applied between the tiles, and which can be adjusted by their arms *c*, arranged outside of the refiner, and provided with suitable fastenings for fixing the valves after adjusting them.

In operating the refiner, air is blown through pipe F into the chamber E, from which chamber it passes in regulated quantities between the falling streams of melted metal to and through the chimney B, as indicated by the arrows. The

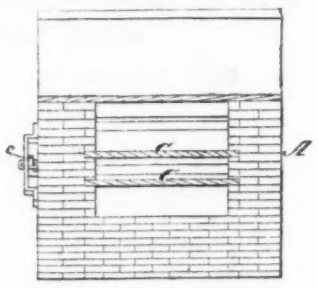


Fig 2.

uppermost tablet receives the melted metal directly from the tap-hole of the furnace, and discharges it through the perforations through its lower half on the imperforated part of the succeeding lower tile. The metal thus flows from one tile to another until it reaches the lowest imperforated tile. The metal is thus divided into numerous streams, thereby thoroughly exposing it to the air and causing it to give up a portion of its carbon, silicon and other oxidizable impurities, which are burned while in suspension, which operation is frequently repeated, each time exposing a greater amount of surface of the metal as the quantity of carbon and other impurities become less.

By means of the valves or dampers G, the air can be cut off entirely from the lower tablets, and so regulated in the upper one as to produce cast iron only, partially decarbonized, or, as in making steel, the supply of air can be so great as will burn out all or nearly all of the carbon and other impurities.

Claim—1. In an iron refiner, a series of perforated tablets, C, the perforations through which gradually diminish in size, but increase in number from the highest to the lowest tablet of the series, in combination with an air-blast.

2. The combination, in a refiner, of an air-chamber, E, valves or dampers G, and a series of perforated tablets.

IMPROVEMENT IN THE MANUFACTURE OF IRON.

Specification forming part of Letters Patent No. 145,462, dated December 9, 1873, issued to William J. Taylor, of High Bridge, New Jersey.

The invention under this patent relates to the production of pig iron by the blast or cupola furnace; and consists especially in the production of a composite material preparatory for use, such material being composed of the extracted magnetic oxides of iron, from the impurities of the native ore, with lime and carbon, mixed in proper proportions with water, so as to form these three constituents into a mortar, the lime being the consolidating element, and produce thereby, when dried, a new article of commerce, in lumps suitable for use in the furnace; the said new composite material combining the comparatively pure oxides of iron, the fluxing material, and the fuel to furnish the required combustion for their reduction to metallic iron, the essential objects being to obtain in each separate and distinct lump of the composite material the elements for uniting, fluxing and melting.

The invention embodies, in combination with the fine purified oxides of iron, fine carbon mixed and united with said oxides and lime, as a consolidating element and fluxing material to obtain a composite material as a new article of commerce and trade in the manufacture of iron. The proportions for the production of this new article in lumps are, to each one hundred pounds of oxide of iron, sixty to seventy pounds of fine coal and five to ten pounds of lime; but these proportions may be varied, as practical experience may determine, to insure the best and most economical results. The mixture is made in the same manner as mortar, the lime being the uniting element, and dried in lumps of the most suitable size for reduction to metalic iron in the furnace. The drying of the lumps may be made by exposure to the air, or facilitated by the application of artificial heat.

It is the design that the composite material shall contain a sufficient quantity of fluxing material and carbon to properly effect the reduction of the material; but additional fluxing material, carbon and raw oxide may be introduced separately into the furnace, from time to time, as may be found necessary for the proper working of the furnace, which must be determined by practice.

Claim—1. A composite material for the manufacture of cast iron, consisting of the combination of fine magnetic purified oxides of iron with carbon and lime for a fluxing material necessary for smelting.

2. The composite material herein described, as a new article of commerce and trade, in the manufacture of cast iron.

PHILADELPHIA CORRESPONDENCE.

PHILADELPHIA, Feb. 2, 1874.

General business is, to a great extent, interfered with by local politics at the present time in this city. Under the new constitution an election for mayor and councils is held during the present month, and partisan strife runs high, with no present probability that whoever may be the candidate elected we will be relieved from the corrupt political rings which have so long ruled our city. There have, however, been some important meetings held during the week, among which were those of the Board of Trade and the Commercial Exchange. The report of the Board of Trade, as read by the secretary, Geo. L. Buzby, Esq., re-elected secretary for the current year, at the same meeting, presents several points of interest. The efforts of the board during the year have been extended toward the subject of ocean mail steamship service, which it urges should be done in American iron built steamships, and hopes to see government patronage extended to the existing line, which, as is noted elsewhere, has been at last accorded by the department. The Centennial receives its due notice, as does State taxation of corporations. The point made at the meeting of the National Board lately held in Baltimore, that the underwriters should receive their just share of the Alabama award, is sustained. In reference to the bankrupt law the report recounts the suggestions for improvement made previously by this body, which are so clearly just and proper that they are here given:

"The first recommends the substitution of salaries for fees in payment for services of registers, marshals and other officials; the second, that the powers of the assignee should be enlarged so as to supersede frequent references to the court in the administration of the bankrupt's estate; third, that a committee should be appointed from the creditors to aid the assignee in the settlement of the estate by authorizing compromises with debtors and directing sales of property; fourth, that the settlement and distribution of the estate by the assignee and committee shall, in the absence of intervention by the court, on the application of a creditor whose debt has been proved, be absolute and final; fifth, that the amount and kind of property to be exempt from the assignment shall be fixed by the law of the United States, and not be diminished or enlarged by any State law; sixth, that proceedings shall not cease in consequence of the death of the alleged bankrupt."

Of cheap transportation, which is now, next to financial relief, the grand topic of discussion, the report very sensibly says:

"Competition between railroad lines has always been recognized as an efficient protection for the public against extortionate charges. Legislation by the several States has latterly been shaped to secure it. What further legal interference should be attempted is now the engrossing question. The construction of great lines of transportation, whether by land or water, at the expense and under the control of the government, is looked upon by many with well-founded distrust. Such relief as it could afford would necessarily be deferred to a remote period, and, when completed, its benefits might be more than balanced by abuses arising from government control. The evils that exist cannot be cured in a day, but considerately, step by step. Measures for the equitable working of *existing* roads, without undue interference with their franchises, are what we most need and can most readily secure."

The formation of a National Department of Commerce is strongly urged, and the point made that no record is kept at Washington of our domestic trade, although it is far greater than that with foreign countries. The Board declines to discuss financial changes further than to endorse a resolution "opposing any increase of the paper currency of this country so long as it continues to be irredeemable in specie on demand."

In regard to our local shipping trade, the statistics show it to be growing rapidly, the arrivals for the past year having been 10,734, of which one-fourth were of steam vessels. Eighty thousand tons of new shipping, the principal portion of which is of iron, will, it is estimated, leave the shipyards of the Delaware in 1874. The report is well written, as Mr. Buzby's communications always are, and has much valuable local information not here enumerated.

Since the organization of a weekly line of steamers from this port, by the arrangement between the American and Red Star lines, the Post Office Department has concluded to constitute the Philadelphia office an exchange office for foreign mails and authorized a mail to be forwarded by each steamer, the compensation allowed being the United States postage, sea and inland, on the mails conveyed, calculated by net weight in bulk at 12 cents an ounce for letter and six cents a pound for other mails. This is the first acknowledgement, subsidy or assistance the American line has received from the administration, and is well deserved.

A statement just published compares the receipts for 1873 of the New York Central and Hudson River Railroad, between New York and Buffalo, with those of the Pennsylvania Railroad Company, between New York and Pittsburgh, *via* Philadelphia. The distances are relatively the same, being about 446 miles, and the figures are as follows:

Pennsylvania and New Jersey line	$33,402,748
New York Central and Hudson River line	29,126,851
Difference in favor of Pennsylvania R. R.	$4,475,987

The Pennsylvania Railroad receipts do not include the canal receipts or from any line west of Pittsburgh run by the Pennsylvania company, which has earned its dividend with a considerable surplus after paying all obligations.

Under the free railroad laws of New Jersey and Pennsylvania a scheme for a new line from New York to Philadelphia is being matured. The capital is forthcoming, and the route to be as follows: The track of the North Pennsylvania Railroad will be used from Philadelphia to Doylestown, Penn.; thence by a branch road to Flemington, N. J., where the main line of the Central Railroad of New Jersey is tapped, and a direct connection to New York furnished. Whether this is a pinch scheme to make the Pennsylvania Railroad Company purchase the new work or not remains to be seen. It is said that it is backed by the Baltimore and Ohio Railroad Company, and if so, the bitter hostility existing between that road and the Pennsylvania is sufficient animus to supply the needful capital.

The Reading *Eagle* reviews the iron trade of Berks county, Penn., for 1873, with the conclusion that there was very little money made in that year, except by those manufacturers producing high grades of iron. The future, it considers bright, all the furnaces are in blast, with a probability of continuing. The weekly capacity of these furnaces now in operation is 1958 tons, and annual capacity 101,816 tons. The annual capacity of new furnaces to be blowing by July 1 will increase this to 123,256 tons. The probable production of pig iron for the county in 1873 was 85,000 tons, including the various grades of anthracite and charcoal pig, which, at an average price of $35 per ton, which, including $65 per ton for wheel iron, is a fair average, would make the receipts of the county from its pig iron produced about $3,000,000, being about the same as the receipts in 1872.

The importance of a new geological survey of this State was alluded to in his message by Gov. Hartranft, and was also the subject of an able paper read before the Philadelphia Social Science Association, by Prof. J. P. Lesley, during the week. Prof. Lesley showed that while the national government was prosecuting surveys in the territories, Pennsylvania was doing absolutely nothing, and urged the prosecution of the work. Every legislature of late has been appealed to order this survey, but the reply has been that those interested ought to bear the expense. Such logic can only emanate from the *cow counties*, and is unworthy of business men. Those best informed as to our mineral resources believe that Pennsylvania has as yet been only *scratched*, and that the future will show, if a thorough geological survey be made, the existence of deposits which will surprise those who think our ores are being worked out.

In this connection we note the discovery and opening of a valuable mine of chrome ore near Westchester. The vein is large and the market value of the ore on the dump said to be $25 per ton, which indicates a profitable mining operation.

The Messrs. Cramp & Sons have just delivered to Thos. Clyde, Esq., for the N. Y and Havana line of steamships, the iron ship "Columbus," which has been on exhibition this week, as she is of peculiar ornamentation and elegance. The Columbus is an iron screw of 1850 tons, 285 feet long, 35 feet beam and 23 feet hold. She has a compound engine with cylinders 34 and 56 inches diameter and 42 inches stroke, and is brig rigged, with wire standing rigging. Her cabins are elegantly fitted with American woods, and all her appointments luxurious, being designed both for a large freight carrier and a favorite passenger ship. Peculiar facilities for receiving and discharging cargo are furnished by separate engines and cranes, and dispatch is to be the order of her management. All the shipyards are busy, and new orders for vessels coming in. This applies only to the iron yards, the ship carpenters and caulkers, to the number of six hundred, are on a strike for $3·50 per day, and "the bell," which probably means eight hours, or strictly ten hours, if it means anything.

During the panic the firm of Jesse W. Starr & Sons, of Camden, was compelled to reduce wages, which reduction the men accepted on the assurance that the moment work would justify a return to former prices it would be done. A week since the men were agreeably surprised by receiving their former wages, without notification. Such fair dealing ensures the very best work for the money paid, as well as an immunity from strikes, and the general adoption of it would do much to restrict the irrepressible conflict between capital and labor.

This city has experienced, during the week I review, a loss which reaches into all circles of trade, commerce and manufactures, in the death of an upright, honest man, a just judge and a great lawyer. Ex-Chief Justice Thompson, who fell dead while arguing a case in court, literally "dying in harness," was that extremely rare personification of the present day, whom all parties and classes respected and confided in, simply because of his sterling, unquestionable and thorough integrity. Merchant, manufacturer and client alike felt perfectly secure and safe during his regnum on the bench, and private as well as public questions before him received but one solution, the right side. It is not encouraging to our faith in human nature to be obliged to note the very few public men in whose integrity perfect confidence is placed, but the fact, agreeable or not, exists, and very few men to-day could receive the amount of confidence placed in this plain, honest judge, during his life. Business creeps; the future promises a more rapid gate, but as yet little more is doing than can be helped, and every one is waiting to see what the man over the way thinks about it.

British Metal Exports in 1872 and 1873.

The following figures give the exports of iron, steel and tin plates, from the United Kingdom during the year 1873, as compared with those of 1872.

Articles, and to what Countries Exported.	1872. Tons.	1873. Tons.
IRON.—*Pig.*		
To Germany	310,597	261,642
To Holland	352,895	330,398
To France	90,224	89,156
To United States	195,151	102,624
To Other Countries	382,296	355,844
Total	1,330,143	1,139,664
Bar, Angle, Bolt & Rod Iron.		
To Germany	17,799	26,850
To Holland	8,479	13,320
To France	1,331	2,494
To Italy	19,557	25,067
To Turkey	7,027	8,471
To United States	64,583	23,006
To British North America	46,536	31,339
To British India	16,054	22,578
To Australia	20,841	15,571
To Other Countries	111,393	119,726
Total	313,600	288,422
Railroad Iron of all sorts.		
To Russia	106,939	162,275
To Sweden and Norway	13,172	50,172
To Germany	50,105	41,984
To Holland	5,125	20,599
To France	2,117	2,497
To Spain and Canaries	12,274	13,590
To Austrian Territories	7,989	816
To Egypt	14,484	13,951
To United States	467,304	185,702
To Spanish W. I. Islands	3,330	4,446
To Brazil	20,743	15,047
To Peru	36,613	8,462
To Chili	2,553	5,852
To British North America	77,255	54,573
To British India	14,651	18,087
To Australia	25,094	35,089
To Other Countries	85,672	153,658
Total	945,420	786,800
Wire (except Telegraph) galvanized or not.	33,540	29,884
Hoops, Sheets, Boiler and Armor Plates.		
To Russia	12,344	17,965
To Germany	16,034	26,023
To Holland	9,810	11,759
To France	3,162	4,818
To Spain and Canaries	6,207	5,139
To United States	31,407	18,291
To British North America	16,043	9,447
To British India	18,055	16,770
To Australia	20,267	21,360
To Other Countries	74,166	69,865
Total	207,495	201,437
Cast or Wrought Iron, and all other manufactures (except ordnance unenumerated).		
To Russia	18,434	42,880
To Germany	28,607	28,183
To Holland	13,598	16,485
To France	4,805	5,054
To Spain and Canaries	5,760	8,849
To United States	13,468	22,279
To British North America	21,599	16,917
To British Possessions in S. Africa	3,752	4,986
To British India	20,283	18,762
To Australia	23,595	31,270
To Other Countries	115,706	86,500
Total	269,607	282,165
Tin Plates.		
To France	3,342	3,941
To United States	87,360	85,531
To British North America	4,003	3,343
To Australia	5,094	4,326
To Other Countries	18,284	23,327
Total	118,083	120,468
Old Iron, for remanufacture	107,521	60,478
STEEL—unwrought.		
To France	3,204	2,544
To United States	23,821	19,262
To Other Countries	17,944	17,682
Total	44,969	39,488
Manufactures of Steel or Steel and Iron combined	11,384	10,508
Total of Iron and Steel	3,382,762	2,059,514

Floating Metals.—Miners in Nevada tell us that the divisibility of quicksilver is so great that particles of it float down the clearest streams, invisible to the eye, and yet large enough to contain still smaller particles of gold or silver, or both. The presence of the floating metals is shown by deposits made on copper vessels sunk in the streams, where, in a few months, hundreds of dollars' worth of quicksilver is collected. In photograph galleries silver and gold float off in the water used for washing pictures, and are gathered by provident workman to be again used for making pictures. Infinitely small as the particles of precious metals are that float in clear water, invisible to the eye, they have, in the aggregate, great commercial value, and are, to some extent, typical of invisible particles of one's income that are carelessly allowed to float away on the stream of waste, when, with a little care, they might be made into "deposits" of an aggregate value that would surprise even a statitician.

The Glen Iron Company have elected the following officers: President, James W. Wilson; directors, S. A. Bridge, Chas W. Cooper, Christian Pretz, Solomon Boyer and Benjamin S. Levan.

The large mill of the Allentown Rolling Mill Co. has resumed operations.

Iron.

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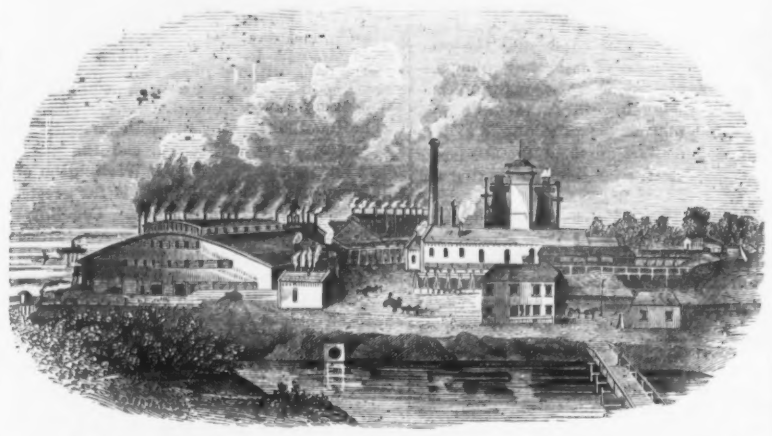
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Yaw's Cow Bells.
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Bessemer Steel Spring Wire.
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Iron.

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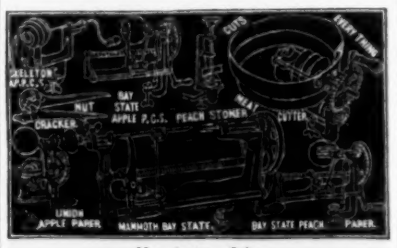
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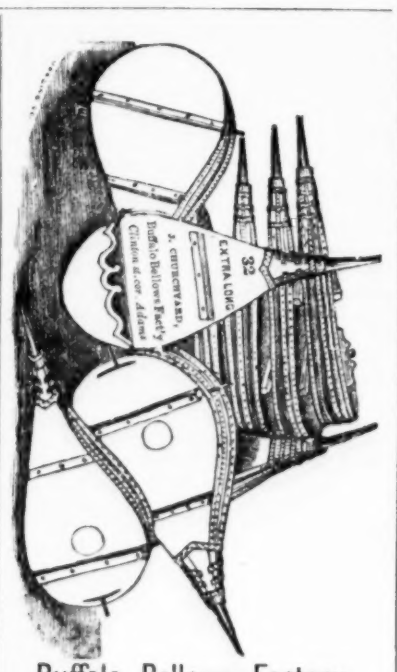
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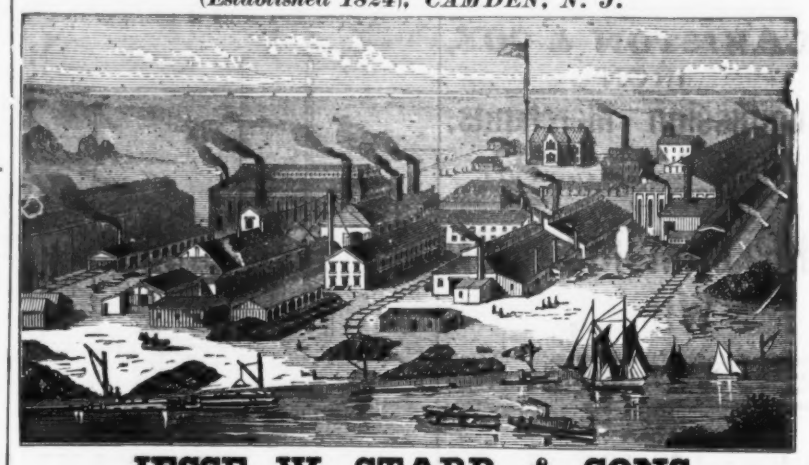
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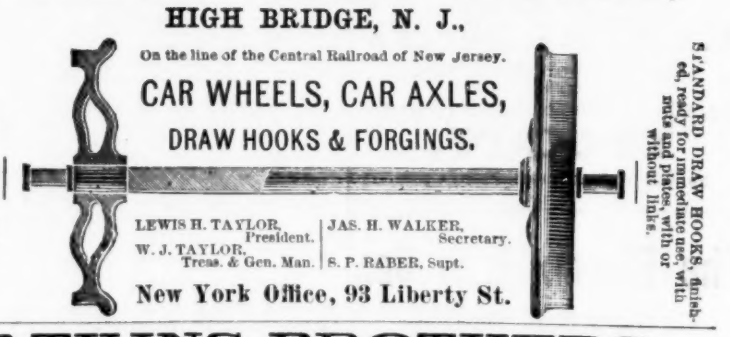
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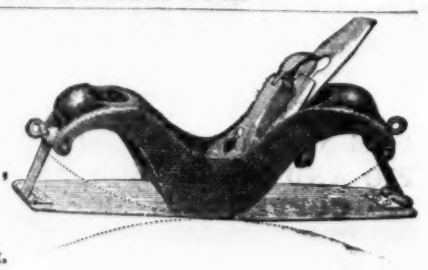


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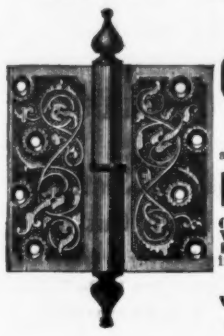
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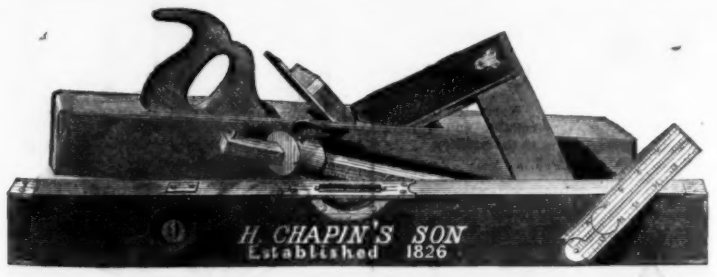
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The Great Pittsburgh Pumping Engines.

We condense the following from the Pittsburgh *Commercial:*

Learning yesterday that one of the most difficult castings belonging to the pumping machinery for the new water works was to be made, we accepted an invitation to visit A. Hartupee's establishment, which we will venture to say never contained a more interesting or speculative crowd than were there assembled at three o'clock p. m. About thirty young ladies, from the Methodist Female College, graced the occasion—the same young ladies whom, like some men we could mention, although bred in our midst, evince little or no interest in the wonders of our workshops. The young ladies exhibited the liveliest interest in the work. Due accommodations were provided the fair corps of observation. Among the male visitors were Messrs. Milnor Roberts, Superintendent Atkinson, Dr. Hostetter, P. H. Laufman, D. W. C. Carroll, Joseph L. Lowry, inventor of the engines, and a goodly number of representatives of the press, all engaged in examining the ponderous machinery which at the present time fills the extensive establishment. All the wrought iron work for the first pair of engines ordered is completed; all the wrought iron work for the second pair, with the exception of the cranks and shafts, (which are now under way), is made, but not fitted. All the composition, or brass work, for the first pair, and about half the composition castings for the second pair are completed. Upward of two-thirds of the iron castings for the first pair, and more than one-third of the iron castings for the second pair are made, namely the two steam cylinders for the first pair, and the two lesser steam cylinders for the second pair. The eight plungers, the eight pump barrels, the eight columns to support the pump shaft, the sixteen brackets to support the bedplate, and the four check valves required for both pair of engines are completed. Half the bed-plates, one of the two fly-wheels and many other large castings, including one of the sections of the valve chamber are also on the floor of the shop, blocking the shop and street in front of it.

The event of the day was the casting of the second piece of the valve chamber. This, we are assured, is one of the most important and, at the same time, difficult castings to make. Considerable interest was manifested by the lookers on, to many of whom the proceedings were a novelty. The foreman of the foundry, Mr. Wm. Elkins, preserved the demeanor of a man to whom the successful production of a twenty-five or thirty ton casting was a commonplace affair.

As the time approached for the "run," all eyes were directed upon the workmen. The air furnace and cupola were charged with forty tons of metal. The mold, formed of brick, and placed on a huge cast iron-frame, was lowered in the pit, and "rammed" tight. The mold contained a large number of "cores." A large shank, or ladle, which held from fifteen to twenty thousand pounds of iron, was filled from the cupola; at a signal from the foreman the air furnace was tapped; orders were given to pour the molten metal from the ladle, and simultaneously a fiery stream darted from the furnace along the "runner," serpent-like, toward the pit. All was conducted without noise or confusion, and in the brief space of two and a half minutes the casting was completed.

The valve chamber, when completed, will weigh 128,000 pounds. It is made in two sections, is nineteen and one-fourth feet long, six feet eight inches across the bottom of the flange, and seven feet eight inches high. It will form the case of the pumping machinery. Judging from the specimens of work upon the floor, it bids fair to prove a first-class casting. The first piece of the valve chamber made is universally admired by those capable of forming an opinion about such matters. Indeed, the entire work elicits warm commendations from practical molders and machinists. Mr. Elkins has been exceedingly fortunate thus far, not having lost one casting.

The maximum capacity of the new engines is estimated at 82,000,000 gallons in 24 hours. The weight of some of the pieces is as follows: Cranks (four in number) nine tons each; shafts (two) twenty-four tons each; eight sections of the four valve chambers, two hundred and forty tons; fly-wheels (two) seventy-five tons each. The eight plungers will weigh, when loaded, nearly nine hundred tons. The four small steam cylinders for both pair of engines weigh twenty-five tons each, are sixty-four inches diameter, and seventeen feet long. The large cylinders for the second pair of engines, usually termed compound cylinders, will be eight feet ten inches in diameter, with fourteen feet stroke, and will weigh thirty-two tons each.

The massive proportions of the machinery correspond to the service demanded. The average strength of each of the parts will be from eighteen to twenty times the minimum strain imposed. Taking into consideration the number of gallons, and the hight the water will be elevated, these will be the largest and most powerful engines ever built. They will pump water to Hiland avenue reservoir (the highest reservoir), counting interest on cost of first construction, at a fraction over one cent per thousand gallons. Leaving out interest on first construction, counting running expenses alone (salaries, fuel, etc.), the cost will be a fraction less than four mills per thousand gallons.

Mr. R. Werdermann, civil engineer, Princess street, Surrey, claims a new process of producing metallic aluminum without the employment of metallic sodium or potassium; also for effecting the direct production of caustic soda from chloride of sodium, without employing sulphuric acid.

A New Method of Burning Bituminous Coal.

Mr. Thos. S. Speakman, late representative of the Franklin Institute, of Philadelphia, at the Vienna Exposition, says:

During my stay in England I witnessed, on a most extensive scale, a new system of burning bituminous coal, and other kinds of fuel, which rendered the combustion so perfect as to prevent the generation of smoke, thus effecting an economy of from 35 to 40 per cent. in the cost of fuel. It is an American invention, and the following is a minute description of the apparatus employed and its principles of working. It consists of a blast from a fan or blower introduced under the fire grate into a tight fitting ash box, which, passing through the fire, is met at its upper surface by a back atmospheric pressure, created by one or more pipes, descending from that point of the furnace where the heat and smoke usually escape into the chimney. To create a back pressure, as before described, the downward pipes are employed. The air from the fan or blower meets this back atmospheric pressure in the body of the fire, and produces a heat and combustion like that from an ordinary blow pipe, so perfect as to prevent the generation of smoke. All the combustible matter of the coal or other fuel being consumed, nothing escapes except the residuum, carbonic acid, and nitrogen gases, which, if permitted to remain, would extinguish the fire. To avoid that difficulty, by freeing the furnace from such incombustible residua, the pressure of the fan is somewhat greater than the back atmospheric pressure, thus keeping up a slight circulation from the furnace into and through the down pipes, as above described, which enables the heat usually escaping from the top of chimneys to be utilized by water in a tank, in which these pipes, or the succession of down pipes, are immersed, the water thus heated affording additional economy in the process.

This invention, owing to the present high prices of coal in Europe, is likely in time, from its great economy in fuel, to revolutionize almost every department of trade, and the smoke which usually escapes into the open air in all manufacturing districts being prevented, will no doubt add greatly to health, convenience, and cleanliness wherever it is used.

Canadian Demand for a Protective Tariff on Iron.

The following, which we take from the Hamilton (Ont.) *Spectator* of a recent date, reveals a state of affairs among our northern neighbors which is worthy of notice:

In the five years ending June 30, 1873, Canada paid to foreign countries more than fifty-six millions of dollars for iron, and almost twenty-one millions of that sum was paid in the last year of the lustrum. The amount contributed to the revenue by the trade was $93,840·89, or about 4½ per cent. on the importation, while the remainder of our imports paid upward of fifteen millions, or more than 14 per cent. Tea, largely consumed by the poor, which cannot possibly be raised in Canada, pays about 34 per cent.; sugar, an article of universal consumption, which, however, can, and probably will, be made in Canada, pays over 40 per cent.; but iron pays only 4½.

A company proposes to work the iron mines which exist near Ottawa, and has issued a circular to be laid before the Minister of Finance, embracing some most important statistical and other information. It shows that our imports of iron have risen from $6,173,720 in 1869, to $20,994,890; but, while that portion paying 15 per cent. has risen from $2,132,021 to $4,642,299, that paying 5 per cent. has risen from $1,817,800 to $4,852,148, and that paying no duty has risen from $2,223,879 to $11,510,443. This shows the benefit of protection; inadequate as it has been, our iron manufactures have been aided by a small duty, and have very largely increased, the raw material having increased 400 per cent. in five years, while the import of manufactured iron has increased by only a little more than 100 per cent. If any further proof of the value of protection were needed, it would be found in the fact tersely stated in the circular:

"It is a fact that within the last three months iron has been imported into Canada from the United States, manufactured from ore taken from the Hull mines, near Ottawa."

We have often pointed out that manufactures of iron have been imported into Canada, composed in whole or in part of Canadian iron, dug from our mines, carried into the United States, paying 20 per cent. duty, there smelted and manufactured, and returned to us, paying from 5 to 15 per cent duty on its re-entrance to Canada: and we have also dwelt upon the more discreditable fact that the labor was largely done by Canadian hands, directed by Canadian brains, which had left our country because there was no large field or adequate remuneration for them at home. And now the shameful confession has to be made that the very pig iron used by our manufacturers is made from our iron ore, dug from our mines, taken to the United States to be smelted, paying 20 per cent duty, and then returned to Canada to be manufactured. And while this process is going on, settlers in the neighborhood of the mines are burning their wood in order to clear the land.

A large protective duty will not be required to encourage the production of iron. The authors of the circular in question think that an increase on those articles now paying 5 per cent. to 7½ or 10 per cent., and the imposition of 5 per cent. on pig iron would be sufficient. The great importance of the matter cannot be denied, and it is to be hoped that the government will be compelled to do its duty in this effort to build up a large and profitable industry.

Mr. W. Hansen, of Gotha, Germany, claims to have introduced something new in the means of joining and fitting together separate pieces of iron, for building up foundation and bed-plates, bridge voussoirs, wheel segments, and the like. This consists in making the respective segments or pieces somewhat shorter than their full length; the abutting ends are then inclosed in a mold, and molten iron is run into the intervening space, so that a connecting block or casting is provided, against which the segments or pieces abut and bear truly, when bolted or otherwise fastened together *in situ*.

Chain and Anchor Testing.—A recent Act of Parliament has caused considerable agitation amongst chain cable and anchor manufacturers, who have found great difficulty in complying with its provisions. To view the new process, the works at Tipton, belonging to the Staffordshire Public Testing Company, were a few days ago thrown open for inspection. On this occasion, Mr. S. Tregeund (superintendent) first explained the old system of testing, and in a building where this is carried on drew attention to a tensile lever which, he said, had the power of putting on a strain of 105 tons. As an auxiliary to this, is a hydraulic quadrant lever, and affixed to the tensile lever is a telegraphic communication, so that when the proper strain is reached the wire makes its signal. An anchor, weighing about 8 cwt., was placed within the triangle at the end of the lever, and the engine was set to work. The heavy chain attached to the anchor and to one portion of the hydraulic cylinder soon began to tighten, and in a short time the anchor was pronounced fit for service, having stood the requisite strain. The new appliances were afterward inspected, and the strain of the "breaking machine" was stated to be equal to 150 tons, which is the extent of the licence allowed to the company.—*Iron.*

A Chinese Arsenal.—Kao Chang Miao, which is about six miles from Shanghai, is the site of an important establishment reflecting great credit on the Chinese government. Although it has been in working order but five or six years, a remarkable efficiency has been arrived at in the construction of vessels, and the manufacture of arms and machinery. As may be imagined, a number of foreign artificers are employed, and these, in conjunction with some 1500 natives, manage to turn out some very creditable specimens of naval architecture, as well as a large variety of other articles of a complex character. A few months ago the arsenal was turning out "Remington" rifles complete, both the long arm for foot, and the carbine for cavalry, at the rate of about 20 per day. Shot and shell, rifled and spherical, iron gun-carriages, and "Downton's pumps also form a part of the products. Since the formation of the establishment, the employees have constructed five or six steam vessels, ranging from 80 to 400 horse-power. The latter, which measured between 2000 to 3000 tons, was a steam-frigate, pierced for 26 guns. Every part of her, with the sole exception of the screw-shaft and cranks, was manufactured on the spot.

The manager of the iron works of Wednesbury, Staffordshire, England, Mr. C. E. Smith, has introduced improvements in the machinery for making "skelps" to be employed in the manufacture of tubes of wrought iron and steel. In this machinery the essential parts are a pair of tools or dies of the same length as the required skelp, the lower die being fixed on the bed of the machine, and the upper die being movable, and actuated preferably by hydraulic power; and these dies preform two functions, namely, to dish or give a trough-shape to the metallic strip, in the first place, and next to convert such dished strip into a skelp or unwelded tube. Thus, for the production of skelps for gas-tubes, a heated strip of wrought iron or steel is placed on the dishing part of the fixed lower die, and hollowed or dished into a trough by the action of the movable upper die when brought down thereon: while still hot, it is then transferred to the finished part of the die and placed on its edge, where, by the decent of the upper die, the strip is finally compressed into the finished shape required, whereby the completed skelp is fashioned. For boiler tubes lap-jointed skelps are required, and for this purpose a suitable mandrel is placed within the dished strip before the finished part of the dies complete the operation.

Improvements in the manufacture of castings, and the apparatus connected therewith, are claimed by Mr. I. Geoghegan Willans, St. Stephen's Crescent, Bayswater, London, England, whose invention relates to an admixture of some hydrocarbon with the refractory material of which the mold is made; thus, pitch, tar, resin, oil, or solutions of these substances, are added to the sand, clay, alumina, or their compounds, so that when the composite material is dried, or its volatile constituents are expelled by heat, some of the finely divided carbon will remain, mixed with the sand or other materials used in the molds or in the crucibles employed for holding the molten metal of which the castings are to be made. The mode of procedure is by the admixture of the hydrocarbon with the sand or other material, and forming the mold therewith previous to the drying process; or the hydrocarbon may be added, and the compound dried and its volatile elements be expelled by heat, before the same is employed to form the molds; or, again, in some cases, the mold having been previously formed in the ordinary manner, the hydrocarbon may be applied to its surfaces in a fluid condition, so as sufficiently to penetrate it, the drying or heating, if required, being subsequently effected. For the manufacture of pots or crucibles, also, to be employed in melting metals for castings, the materials may similarly be treated as above described. At a subsequent stage of the manufacture of castings, the invention relates to and prescribes the application of certain metallic oxides, or other similar substances acting upon carbon at a red heat, in an adhesive manner to the whole or part of the surfaces of steel and iron castings, before they are subjected to the annealing process in pots or ovens.

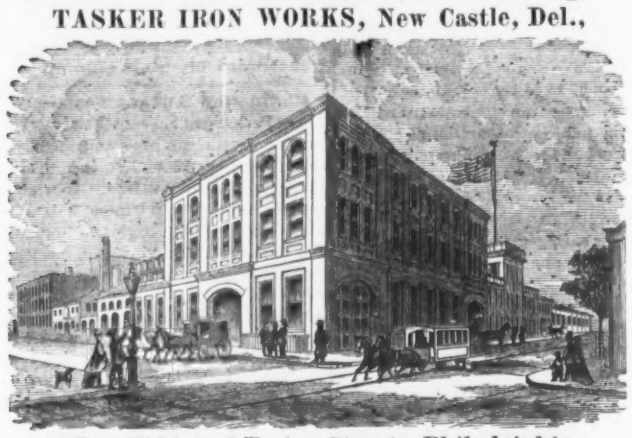
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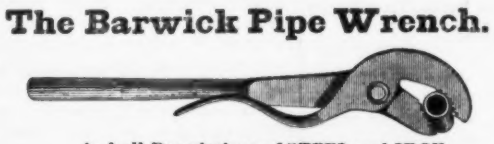
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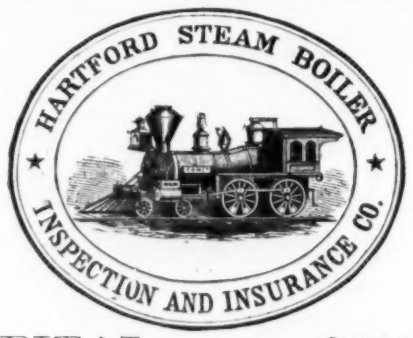
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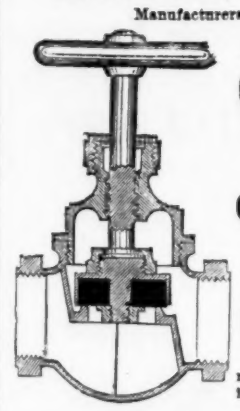
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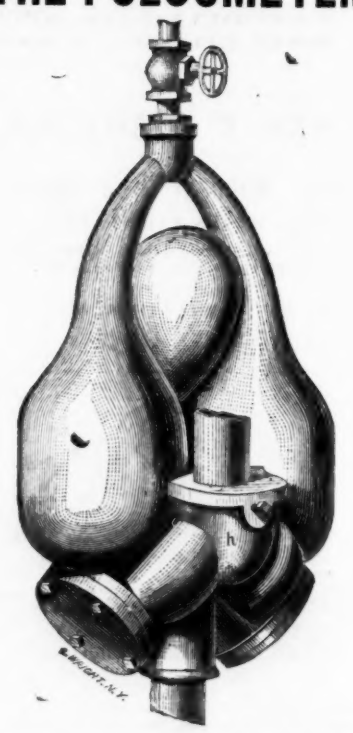
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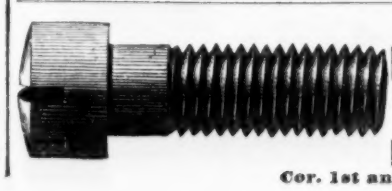
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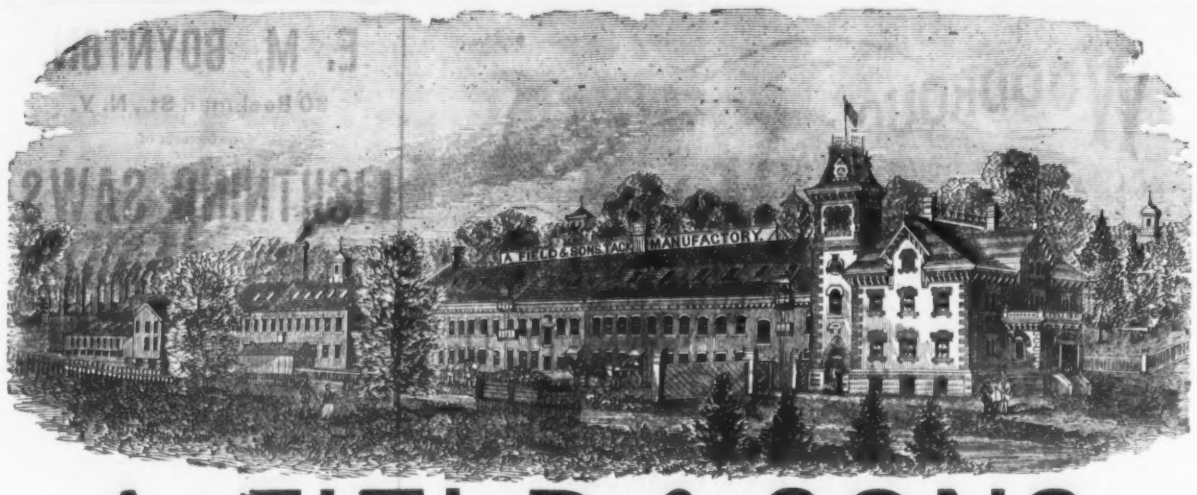
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Iron Construction.

At the last meeting of the members of the Architectural Association, in London, Mr. Richard Moreland, C. E., read an important paper on "Iron Construction," in which he said that with regard to cast iron pillars in long columns the transverse section had two duties to perform, viz., to support the load and resist flexure so that only one-half of the strength of the pillar could be considered available for the resistance to crushing, and the other half for the resistance to flexure. In other words, one-half was in compression and the other half in tension; and this was precisely the condition in which a girder was in; or it might be taken as a question of leverage, the length of one end being the diameter of the pillar, and the other half length of the column; but in the case where the pillar was large in comparison to its length, then the whole of the material must be taken to resist the compression of a considerable portion of its crushing strength. The working load on pillars should not exceed one-tenth to one-sixth of their breaking, and, under ordinary circumstances, should not exceed twenty-five diameters. Special care should be taken when the pillar was subject to transverse strains, where heavy goods of unstable form were piled against them, as a considerable strain might be produced from this cause; and also in the event of blows from rolling goods or other cause. Pillars in juxtaposition to brick walls took the whole load when they were strong enough to bear it; but masonry served to stiffen the pillar if secured to it; but if the wall was built in cement, and of considerable thickness in comparison to the iron pillars, they then might possibly assist each other. In cases where the brickwork was liable to be compressed, and the pillar unequal to its load, then obviously nearly the whole weight must be discharged on the pillar; but care must be taken, as possibly intense compression might take place at the base of the pillar. The basis should be as level as possible. Short columns under crushing force were deformed by pyramid wedges forming at the ends and forcing out wedges at the sides; this was also seen in the crushing of stone and other solid materials. For various forms and sections of pillars, and also of different lengths, the strength of the material would vary considerably under the diverse conditions in which it was placed. For small proportions of length to diameter, cast iron was the strongest material, but its strength diminished, as the proportion of length to diameter increased, faster than wrought iron; and in comparison of solid square or wrought iron pillars, with solid round cast iron pillars beyond twenty-six and a half diameters, wrought iron was stronger. For ordinary work no cast iron columns should exceed twenty-seven diameters. The elasticity of cast iron was twice as great as that of wrought iron. The strength of girders to resist resilience was proportional to the weight of the beam, irrespective of the length, so that a beam twice the weight or twice the length would take twice the load to produce the same deflection. Rolled girders were only economical up to a given size and weight.

He then referred at length to the wrought iron trussel girders placed over the dining-hall at De Keyser's "Royal Hotel," and said that, in designing the outline of the iron work of these beams, Mr. Greening, the architect of the building, had several objects in view. The thickness of the floors through which the structure was fixed should not be thicker than the other floors, and that, generally, the girders comprising the truss should be limited in depth, so as not to interfere with the hights of the various rooms; the central space, too, should be quite open. The two side spaces being occupied with chimney breasts and flues, economy of space and material, together with great rigidity, were thereby attained. The construction of the six trusses must be briefly described. Two wrought iron girders were taken for upper and lower members of the truss, and distanced apart by two vertical girders, and so dividing the space into nearly three equal parts. From the junction of the vertical girder with the upper girder to the ends of the lower girder, another wrought iron girder was placed at an angle, and securely bolted and secured at the ends. Each of the long girders, independent of the truss construction, would be able only to support its own area of floor, say 1 to 1½ cwt. per foot; but by the employment of these girders as upper and lower members to the construction, these, by the addition of about the weight of one girder and a half, were made to support a load of ten times that which they would carry by themselves. The three lower girders were placed immediately above the dining-hall; the lower girder was only ten inches deep, twelve inches wide; the upper girder was sixteen inches deep, twelve inches wide; the length was thirty-three feet three inches; and the span between walls thirty-five feet, six inches; and the whole hight was nine feet three inches. The distance between the vertical rods was fifteen feet six inches, so that a space was given of seven feet one inch high by fifteen feet six inches wide. In the center of the girders the diagonal trusses were of the same section as the lower girder. The sectional area of the lower girder and trusses was forty-six square inches, and deducting eight inches for rivets, gave a net sectional area of thirty-eight square inches. The upper girder had a gross section of forty-eight inches, which was all available for compression. The foot of each diagonal was bolted to the lower girder, and an angle casting was also secured to it and the lower girder; and similar castings were also fixed at the junction of the vertical girder with the upper end of the diagonal. Each separate piece of the truss was riveted together and laid in position, the corner castings fitted, and the whole of the holes drilled, after being carefully put together; and the various portions were then fixed in their respective positions and securely bolted together. The summary of the load on the girder was 200¼ tons.

Extraordinary Run of Bessemer Steel at the Cambria Iron Works.

The superintendent of the steel works of the Cambria Iron Company, at Johnstown, Mr. John E. Fry, makes the following statement of the operations of the works for the week ended January 17, 1874:

Number of blows	189
Number of tons of ingots	955 980-2240
Starting time for cupola, Jan. 12th, 5:30 a. m.	
Last blow made, Jan. 17th, 2:30 p. m.	
Consecutive hours run	128 5-6
Average heats per hour	1 467-1000
Monday, 12th inst., 24 hours	34 blows
Tuesday, 24 hours	37 blows
Wednesday, 24 hours	31 blows
Thursday, 24 hours	36 blows
Friday, 24 hours	40 blows
Saturday, 5½ hours	8 blows
Delays for week, 4 hours and 5 minutes.	
Greatest production in a given time:	
Tuesday, 7¼ hours	16 blows
Friday, 8 hours	17 blows
Friday, 24 hours	46 blows

BLOOMING MILL.

Number of blows heated and rolled	189
Number of tons ingots	955 980-2240
First blow charged, Jan. 12th, 8 a. m.	
Last blow rolled, Jan. 17th, 4 p. m.	
Consecutive hours run	128
Average heats per hour	1 476-1000
Greatest number of heats in 24 hours	46
Greatest number of heats in 8 hours	16
Fastest work, 32 ingots in 82 minutes.	
Delays during week, three and four-sixths hours.	

The work in both departments was performed without previous preparation, and with the regular hands, no additional ones being employed.

This product was so remarkable and so creditable to Mr. Fry and his assistants that the general manager of the company, Mr. Morrell, deemed it proper to issue a special order of commendation and thanks during the following week. We quote from this order as follows:

"The report of John E. Fry, superintendent of the steel works, for the week ending on the 17th inst., shows that the product of steel blooms during that period exceeds in quantity, while equaling in quality, the best results published by other works, in this country or abroad, in which machinery of the same capacity is employed; and is a direct evidence of ability of management, and superior intelligence, zeal, and efficiency on the part of the workmen.

"The company is gratified that the capacity of the works, developed by the harmonious cooperation of all the skill and labor which they employ, has been so signally demonstrated, and the thanks of the company are hereby extended to the superintendent, foremen, and the employees generally.

"It should be noted that the large product was not the result of any special preparation; and that it has not caused any exhaustion of forces, or damage to machinery, is shown by the large and good work of the current week."

Punching Cold Iron.*

BY COLEMAN SELLERS.

At the meeting of the Franklin Institute, held in December, 1873, two cold punched hexagon nuts were exhibited by Messrs. Hoopes & Townsend, bolt, nut, and washer makers, of Philadelphia. These specimens are worthy of attention, from the fact that one of them had a hole one quarter of an inch in diameter and one inch deep, the other was perforated with a hole half an inch in diameter and one and a half inches deep.

These specimens are remarkable, when we take into consideration the oft-made statement "that the maximum thickness of iron that can be punched cold is about the diameter of the punch," as the depth of the smallest nut is four diameters of the punch, and the largest one three diameters of the punch.

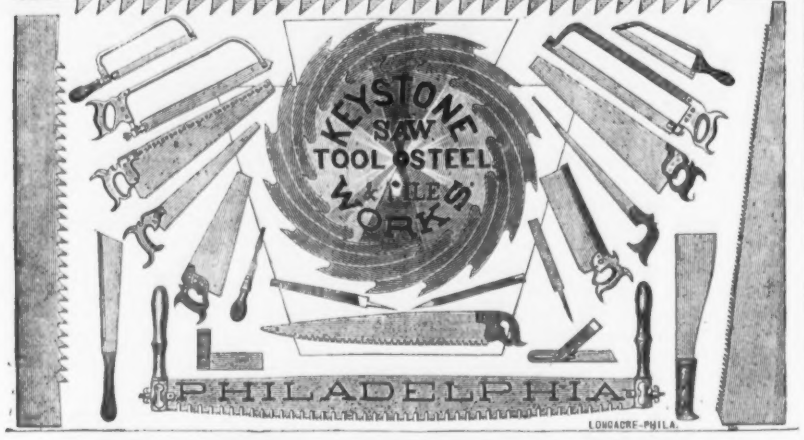
In conversation with Mr. Barton Hoopes, who has conducted these experiments, I learn that he has since succeeded in punching a half-inch hole through an inch and three-quarters thickness of wrought iron; the punching which came out of the hole I have examined, and it differs in no respect from ordinary punchings, but it has been compressed to seven-eighths of an inch in length—that is, the punching shows an irregular cylinder half-inch in diameter, and seven eighths of an inch long. The metal forming the punching is not condensed into a smooth cylinder, but shows the usual roughness common to all iron punchings, while the punched holes are very smooth.

The punch and die hole were the same size, and there has evidently been a side flow of the cold metal upon the entrance of the punch, and the operation may in a measure be considered a piercing one, up to a certain depth, and finally the punching out of the residum after it has attained that depth. In punching the quarter-inch hole through one inch iron, the punching showed a very smooth surface, and was only three-eighths of an inch long, seemingly very much compressed.

I have examined the punches used in this curious experiment; they differ in no respect from ordinary punches; they are made of good steel and hardened in some peculiar manner unknown to me. Bars of iron one inch square, punched with a quarter-inch punch, show a sensible widening under the action of the punch, and a bar of inch and three quarters square iron, punched with a half-inch punch, is swelled sideways to an inch and thirteen-sixteenths, showing conclusively that some of the iron has been forced sideways. The machines used in driving the punch through this great thickness are said to be of unusual strength and accuracy of construction.—*Engineering.*

*With reference to the experiments described in this article, Mr. Coleman Sellers further writes: "I should state that one of these sample nuts with a ⅝ inch hole through 1¼ inch iron was to-day planed in half lengthways of the hole. I then etched the surfaces with acid to expose the grain. It seems as if the point had penetrated ¾ inch without causing much side condensation of the metal; after that the compression seems to be uniform. The metal punched out shows the usually 'scaly' appearance of deep iron punchings, or as if one part was crushed over the other, the projecting edges being full to size and burnished. The holes in the nuts are smooth and polished. I cannot help thinking that these are noteworthy examples of cold punching. Mr. Hoopes says that he broke many punches before he made one pierce such a depth of metal."

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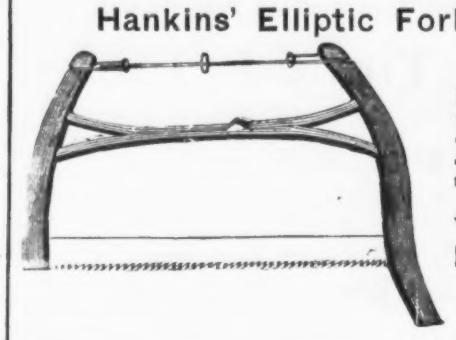
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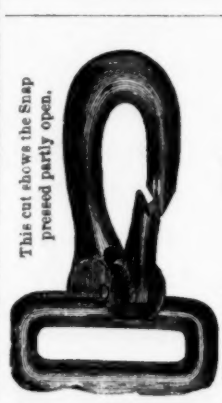
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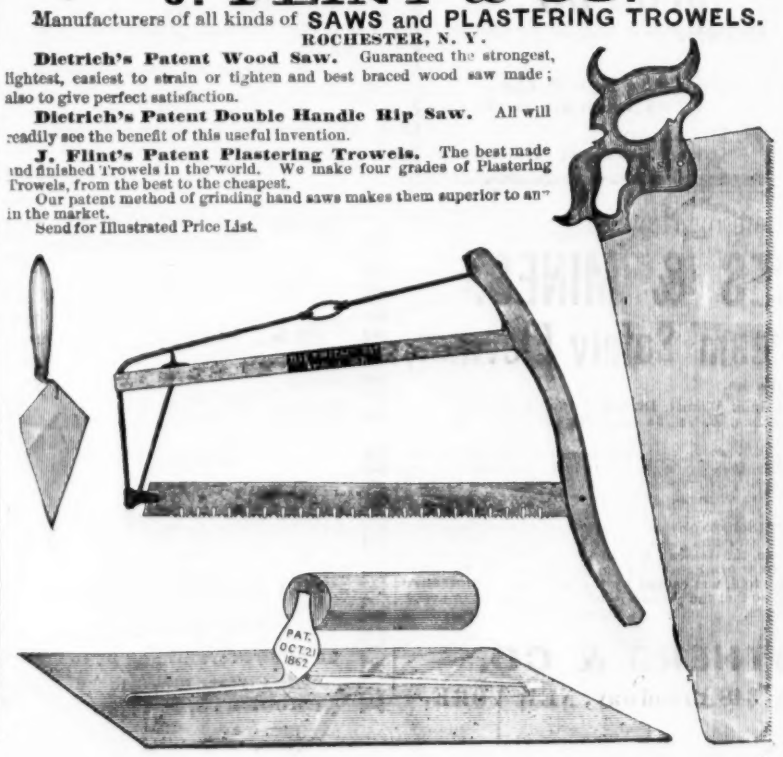
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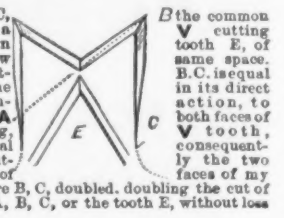


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This is produced by dressing the two points of my **M** tooth, to cut in line so that the outside B, C, has four times the space of the slant edge behind it, or from 1 to 5, while slant has space from 1 to 2, the inefficient slant edges are thus practically concealed and do but slight surface cutting, while B, C, edges cut and clear simultaneously.

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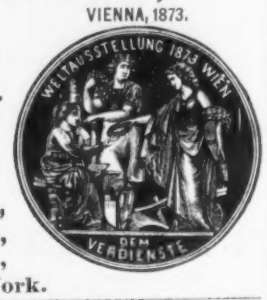
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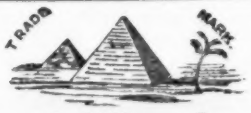
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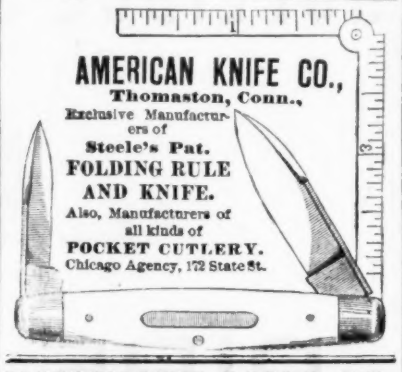
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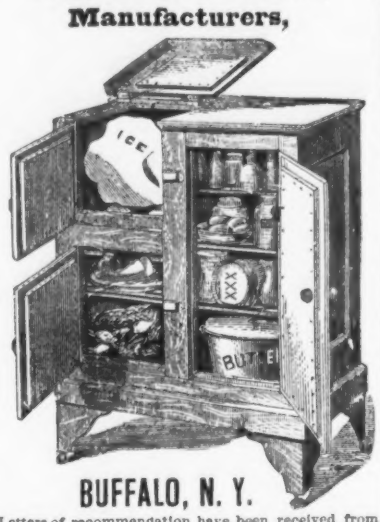
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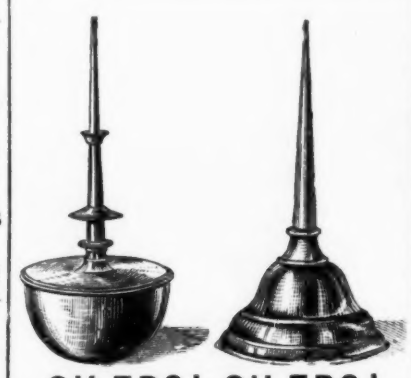
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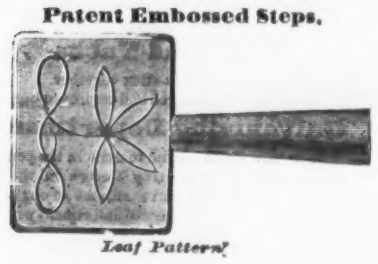
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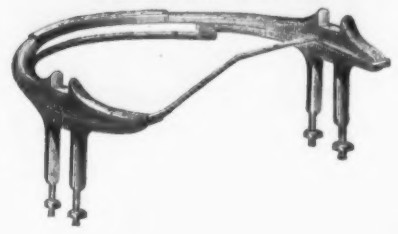
Leaf Pattern.

Established 1850.

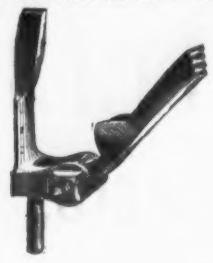
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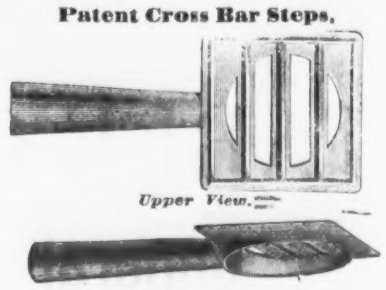
No. 6 Fifth Wheels.



1871 Pattern Shaft Couplings.

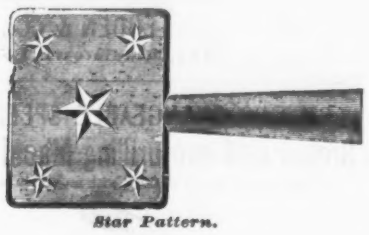


Patent Cross Bar Steps.



Upper View.

Lower View.

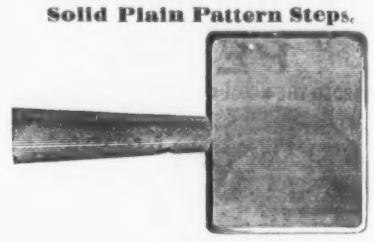


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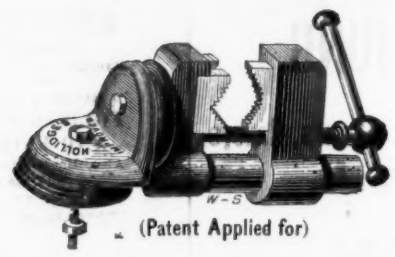
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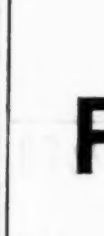
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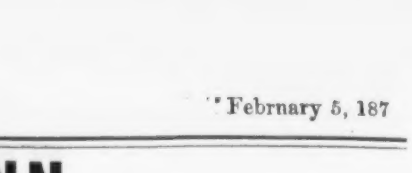
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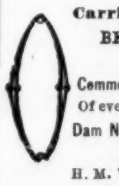
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Sanderson Bros. & Co., 16 Cliff, N. Y. 28
Spear & Jackson, 98 Chambers, N. Y. 13

Files, *Manufacturers of.*
Auburn File Works, Auburn, N. Y. 21
Barnett G. & H., 41 and 43 Richmond, Phila. 21
McCaffrey & Bro., 1732 and 1734 N. 4th, Phila. 21
Nicholson File Co., Providence, R. I. 10
Wheeler, Clemson & Co., Middletown, N. Y. 10

Fire Brick. *Makers of.*
Brooklyn City Retort and Fire Brick Works, Van Dyke, St., Brooklyn, N. Y. 13
Hall A. & Sons, Perth Amboy, N. J. 13
Kreischer B. & Son, 58 Goerck, N. Y. 13
Newkumet Philip, 23d and Vine, Phila. 13
Palmer, Newton & Co., Albany, N. Y. 13
Salamander Works of Woodbridge, N. J., foot of Bethune St., N. Y. 13
Watson John R, Perth Amboy, N. J. 13

Fluting Machines.
Meyers Mfg. Co., 200 Centre, N. Y. 4
Turner W. D. & Co., Geneva, Ills. 21

Flint and Emery Paper and Cloth.
Cowdin Mfg. Co. 118 Chambers, N. Y. 14

Gage Cocks and Damper Regulators.
Murrill & Kelzer, Baltimore, Md. 31

Galvanized Iron.
Lefferts Marshall Jr., 94 Beekman, N. Y. 4
Whitnum S., Greenpoint, L. I. 4

Glass, *Importers of.*
Downing A. C. & Co., 57 Beekman, N. Y. 23

Governors.
Shive Governor Co., Bethlehem, Pa. 27

Grindstones.
McDermott J. & Co., Cleveland, O. 23
Shepard Sidney & Co., Buffalo, N. Y. 6
Wood Walter R., 263 and 265 Front, N. Y. 23

Gunpowder. *Makers of.*
Kneeland F. L. (Dupont) 70 Wall, N. Y. 28
Laflin & Rand Powder Co., 21 Park Row, N. Y. 28

Hammers, etc., *Manufacturers of.*
Emmet Hammer Co., Brooklyn, E. D., N. Y. 3
Hammond C. & Son, 13 N. 5th, Phila. 8
Minot & Co., Oliver, Boston 9
Nelson Tool Works, 157 E. 82d, N. Y. 3

Handles, Hoe, Rake, &c.
Smith J. W. H. & Co., Charlotte, Mich. 26

Hardware, *Brass and Galvanized.*
Tiebout W. & J., 290 Pearl, N. Y. 2

Hardware, Commission Merchants.
Fernald & Sise, 100 Chambers, N. Y. 21
Green R. M., 100 Chambers, N. Y. 8
Graham & Haines, 88 Chambers, N. Y. 26
Keith & Kelso, 23 & 25 S. Charles, Baltimore 26
Walbridge Geo. B., 99 Chambers, N. Y. 23

Hardware Dealers.
Brower John I. & Son, 288 Greenwich, N. Y. 24
Lloyd, Supplee & Walton, 625 Market, Phila. 21
Quackenbush Townsend & Co., 59 Reade, N. Y. 20
Shepard Sidney & Co., Buffalo, N. Y. 23
Turner, Seymour & Judds, 64 Duane, N. Y. 21

Hardware Importers.
Beam & Murray, 54 Cliff, N. Y. 24
Boker Hermann & Co., 101 Duane, N. Y. 25
Field Alfred & Co., 47 John, N. Y. 25
Hilger & Sons, 87 Chambers, N. Y. 25
King H. & J. W., 80 Chambers, N. Y. 11
E. Frith, 16 Cliff, N. Y. 11
Van Wart & McCoy, 43 Chambers, N. Y. 11
Turner R. A., 37 Chambers, N. Y. 11

Hardware Manufacturers.
Biddle Mfg. Co., 78 Chambers, N. Y. 27
Enterprise Mfg. Co., Phila. 26
Hart, Bliven & Mead Mfg. Co., 243 Pearl, N. Y. 26
Kellogg Wm. P. & Co., Troy, N. Y. 30
Lane, Gale & Co., Troy, N. Y. 21
Many P. L. & Marshall, 48 Warren, N. Y. 30
Middletown Tool Co., 82 Chambers, N. Y. 12
Miller's Falls Mfg. Co., 78 Beekman, N. Y. 25
Pratt & Co., Buffalo, N. Y. 28
Providence Tool Co., 11 Warren, N. Y. 14
Russell & Erwin Mfg. Co., 45 Chambers, N. Y. 12
Schweitzer Mfg. Co., 57 Reade, N. Y. 10
Shattuck, W. F. & Co., 113 Chambers, N. Y. 21
Stanley Works, 58 Beekman, N. Y. 11
The Wethersfield Novelty Co., Wethersfield, Ct. 26
Turner, Seymour & Judds, 64 Duane, N. Y. 21
Union Mfg. Co., 55 Chambers, N. Y. 7
Williams, White & Churchill, 73 Warren, N. Y. 18
Wilson Mfg. Co., 37 Chambers, N. Y. 23

Hardware Specialties.
Haase John A., rear 116 Vanhorn, Phila. 12
Heaton David, Providence, R. I. 8
Markt & Co., 139 Centre, N. Y. 20
Semple, Burge & Co., St. Louis 32
Shepard Sidney & Co., Buffalo, N. Y. 6

Helve Hammers, *Makers of.*
Bradley Mfg. Co., Syracuse, N. Y. 30

Hemp Piston Packing.
Canfield John & Co., 181 Fairmount Ave., Phila. 26

Hoes.
Peters Bros. Manufacturing Co., Marshall, Mich. 20

Hoisting Engines, *Makers of.*
Otis Bros. & Co., 348 Broadway, N. Y. 9
Todd & Rafferty Machine Co. 10 Barclay, N. Y. 27

Horse Hay Forks and Fixtures, *Makers of.*
Nellis A. J. & Co., Pittsburgh, Pa. 32

Horse Nails. *Makers of.*
Ausable Horse Nail Co., 35 Chambers, N. Y. 3
Brundage & Co., Middletown, N. Y. 10
Globe Nail Co., Boston, Mass. 3
Pratt & Co., Buffalo, N. Y. 23
Putnam S. S. & Co., Neponset, Mass. 10

Horse Shoes, *Makers of.*
Burden Iron Works, Troy, N. Y. 4

Hydraulic Jacks.
Dudgeon Richard, 24 Columbia, N. Y. 20

Insurance, Boiler.
Hartford Steam Boiler and Inspection Co. 8

Iron Brokers.
Boynton Geo. A., 70 Wall, N. Y. 6
Crane U. O., 104 John, N. Y. 2
Hazard & Jones, 212 Pearl, N. Y. 4
W. H. Petit & Pike 72 Wall, N. Y. 4

Iron, Corrugated, *Manufacturers of.*
Corrugated Metal Co., East Berlin, Conn. 4
Mosely Iron Bridge and Roof Co., 5 Dey, N. Y. 4

Iron, Charcoal, *Warm or Cold Blast.*
Quincy John W., 98 William, N. Y. 4

Iron Commission Merchants.
Blakiston & Cox, 333 Walnut, Phila. 5
Hand Jas. C. & Co., 614 and 616 Market, Phila. 21
Hoopes W. Graham, 419 Walnut, Phila. 5
Malin Bros., 228 Dock, Phila. 5

Iron, Pig, *Importers of.*
Williamson James & Co., 69 Wall, N. Y. 4

Iron Dealers.
Abeel Brothers, 190 South, N. Y. 4
Bonnell, Botsford & Co., Youngstown, O. 4
Borden & Lovell, 70 and 71 West, N. Y. 4
Cleveland, Brown & Co., Cleveland, O. 6
Coddington T. B. & Co., 25 Cliff, N. Y. 4
Conklin & Huerstel, 99 Market Slip, N. Y. 4
Fuller, Lord & Co., 139 Greenwich, N. Y. 4
Fuller, Dana & Fitz, 110 North, Boston 2
Gardner Wm., 575 Grand, N. Y. 4
Kimbark Bros. & Co., Chicago 4
Harrison & Gilloon, 556 to 562 Water, N. Y. 4
Hart G. A., 208 Walnut, Phila. 5
Jackson & Chase, 206 and 208 Franklin, N. Y. 4
Judson B. F., 457 and 459 Water, N. Y. 4
Matthews Chas. W., 133 Walnut, Phila. 5
Packard, Goff & Co., Youngstown, O. 4
Pettee & Mann, 228 and 229 South, N. Y. 4
Pfefferle John F., 531 Water, N. Y. 4
Piersons & Co., 24 Broadway, N. Y. 4
Pope Thos. J. & Bro., 292 Pearl, N. Y. 4
Quincy John W., 98 William, N. Y. 4
Richards T. W. & Co., 92 Mangin St., N. Y. 4
Smith Gam'l G. & Co., 342 Pearl, N. Y. 4
Warner A. B. & Sons, 28 and 29 West, N. Y. 4
Williamson James & Co., 69 Wall, N. Y. 4
Whitney Alfred R., 58 Hudson, N. Y. 4

Iron, Manufacturers of.
Britannia Iron Works, Middlesbro', Eng. 6
Burden Iron Works, Troy, N. Y. 4
Cleveland Rolling Mill Co., Cleveland, O. 6
Coffin Wm. E. & Co., 8 Oliver, Boston 4
Ellis W. R. & Co., 17 Batterymarch, Boston 4
Everson, Graff & Macrum, Pittsburgh, Pa. 4
Fulton S. & Co., 242 S. Third, Phila. 5
Jones & Laughlins, Pittsburgh, Pa. 4
Leonard John, 450 & 451 West st., N. Y. 4
Lynchburg Iron Works, Lynchburg, Va. 6
Milwaukee Iron Co., Milwaukee, Wis. 6
New Haven Rolling Mill Co., New Haven, Ct. 6
Old Dominion Iron & Nail Works Co., Richmond, Va. 6
Oxford Iron Co., 81 Washington, N. Y. 4
Phœnix Iron Co., 410 Walnut, Phila. 5
Rowland Wm. & Harvey, Phila. 32
Sterling Iron and Railway Co., 42 Pine, N. Y. 13

Iron, Swedish. *Importers of.*
Jessop Wm. & Sons, 91 and 93 John, N. Y. 28
Mitsander Nils, 69 William, N. Y. 4

Lace Leather, *Manufacturers of.*
Stoyle Wm. H. 403 Library, Phila. 10

Lanterns, *Manufacturers of.*
Dietz R. E. (Tubular) 54 and 56 Fulton, N. Y. 32
Howard & Morse, 45 Fulton, N. Y. 2
Shepard Sidney & Co., Buffalo, N. Y. 6

Lawn Mowers, *Manufacturers of.*
Chadborn & Coldwell Mfg Co., Newburgh, N. Y. 25

Lead and Tin Lined Lead Pipe, etc., *Mfrs.*
Colwell Lead Co., 213 Centre, N. Y. 2

Locks, *Manufacturers of.*
Bohannan Wilson, Broadway and Kossuth, Brooklyn, E. D. 8
Branford Lock Works, Branford, Conn. 12
Norwich Lock Co., Norwich, Conn. 9
Romer & Co., Newark, N. J. 8
Sargent, Greenleaf & Cole, 300 Broadway, N. Y. 15
Trenton Lock Co., 48 Warren, N. Y. 26
Yale Lock Mfg. Co., 298 Broadway, N. Y. 24

Machinery, *Makers of.*
Billings & Spencer Co., Hartford, Conn. 9
Chapin Machine Co., New Hartford, Conn. 31
Pratt & Whitney Co., Hartford, Conn. 30
Sellers Wm. & Co., 1600 Hamilton, Phila. 31
Watson Andrew, 587 Dickinson, Phila. 31
Whitehill, Smith & Co., Newburgh, N. Y. 24
Wood Thomas, 2106 Wood, Phila. 31

Machine Screws, *Makers of.*
American Screw Co., Providence, R. I. 15
Lyon & Fellows Mfg. Co., Williamsburg, N. Y. 8

Machinists.
Demarest, Joyce & Co., Brooklyn, E. D. 9

Machinists' Tools, *Makers of.*
Blaisdell P. & Co., Worcester, Mass. 30
Blaisdell Henry & Co., Providence, R. I. 31
Dimmie & Hine, New Haven, Conn. 25
Harrington Edwin, 15th st. and Pa. ave., Phila. 27
Lincoln Geo. S. & Co., Hartford, Ct. 19
Star Tool Co., Providence, R. I. 30

Machinery and Tool, *Importers of.*
Churchill Charles & Co., 28 Wilson St., Finsbury, London, England 30

Measuring Tapes.
Eddy Geo. & Co., 353 Classon Ave., Brooklyn, N. Y. 25

Meat Cutters. *Makers of.*
Whittemore D. H. Worcester, Mass. 6

Metal Dealers and Brokers.
Coddington T. B. & Co., 25 and 27 Cliff, N. Y. 2
Cort N. L. & Co., 220 & 222 Water, N. Y. 2
Cragin Bros. & Co., 141-5 Lake, Chicago, Ill. 2
Crane C. O., 104 John, N. Y. 2
Gregg H. L. Co., 108 Walnut, Phila. 4
Phelps, Dodge & Co., Cliff, bet. John & Fulton, N. Y. 2
Quincy J. W., 98 William, N. Y. 2
Thomson & Co., 213 and 215 A. A. Water, N. Y. 2
Van Wart & McCoy, 43 Chambers, N. Y. 2

Metallurgists.
Britton J. Blodgett, 339 Walnut, Phila. 24
Brown Thomas M., 1123 Girard, Phila. 24
Henderson James, 80 Broadway, N. Y. 24
Maynard & Van Rensselaer, 29 Cliff, N. Y. 24
School of Mines, E. 49th, N. Y. 24

Mine Boards.
Stevens, G. M., Portland, Me. 24

Molders' Tools.
Carter H. & Sons, 290 Pearl, N. Y. 28

Monuments, *Granite and Bronze.*
National Fine Art Foundry, 218 E. 25th 6

Mouse Traps, Catchemalive, *Makers of.*
Dietz R. E., 54 and 56 Fulton, N. Y. 32

Nickel Platers.
Smith L. A., 42 Mechanic st., Newark, N. J. 21

Norway Shapes, *Rollers of.*
Rowland Wm. & Harvey, 948 Beach, Phila. 32

Note Broker.
Gallaudet F. W., 3 and 5 Wall, N. Y. 4

Nuts, Bolts, etc., *Makers of.*
Ætna Nut Co., Southington, Conn. 14
Arms, Bell & Co., Youngstown, O. 12
Carpenter David, 402 Water, N. Y. 4
Clark Bros. & Co., Milldale, Conn. 12
Clark Bros. & Co., Boonton, N. J. 4
Fuller, Lord & Co., Pawtucket, R. I. 14
Haskell W. H. & Co., Pawtucket, R. I. 14
Lewis, Oliver & Phillips, Pittsburgh and N. Y. 14
Plumb, Burdict & Barnard, Buffalo, N. Y. 32
Rhode Island Nut Co., 11 Warren, N. Y. 14
Sternbergh J. H., Reading, Pa. 14
Union Nut Co., 78 Beekman, N. Y. 11

Oilers, *Makers of.*
White J. H., Newark, N. J. 11

Ore Crushing Machines, *Makers of.*
Blake Crusher Co., New Haven, Conn. 15

Paints and Oils, *Dealers in.*
Devoe F. W. & Co., 117 Fulton, N. Y. 15

Patent Adjustable Elbows.
Sargent, Greenleaf & Cole, 300 Broadway, N. Y. 15

Patent Solicitors.
Howson & Son, Phila. and Washington, D. C. 12
Leggett & Leggett, Washington, D. C. 6
Whitney J. A., 128 Broadway, N. Y. 12

Picture Nails, etc., *Manufacturers of.*
Richards T. C. & Co., 47 Murray, N. Y. 3

Pipes, Fittings, etc., *Makers of.*
Eaton & Cole, 58 John, N. Y. 8
McNab & Harlin Mfg. Co., 56 John, N. Y. 8
Nelson, Finkel & Co., 439 E. 10th st., N. Y. 8
Pancoast & Maule, 227 Pear, Phila. 8
Chas. Gregg Mfg. Co., 62 and 64 Gold, N. Y. 8

Pipe, Water and Gas, *Makers of.*
Brick R. A. & Co., 112 Leonard, N. Y. 6
Graff William & Co., Pittsburgh, Pa. 8
Morris, Tasker & Co., 15 Gold, N. Y. 8
National Tube Works Co., 78 William, N. Y. 6
Starr Jesse W. & Sons, Camden, N. J. 8
Warren Foundry & Mach. Co., Phillipsburg, N. J. 8
Wood R. D. & Co., 173 Broadway, N. Y. 2

Plane Irons. *Manufacturers of.*
H. Chapin's Son, Pine Meadow, Conn. 7
Middletown Tool Co., Middletown, Conn. 10
Sandusky Tool Co., Sandusky, O. 26

Planes, *Manufacturers of.*
H. Chapin's Son, Pine Meadow, Conn. 7
Greenfield Tool Co., Greenfield, Mass. 7
Ohio Tool Co., Columbus, O. 13
Sandusky Tool Co., Sandusky, O. 26
Stanley Rule & Level Co., 55 Chambers, N. Y. 6

Plumbago Lubricator.
N. Y. Black Lead Works, 172 Forsyth, N. Y. 32

Plumbers' Materials, *Manufacturers of.*
Carr Wm. S. & Co., 106 Centre, N. Y. 8

Presses, Power. *Makers of.*
Am. Saw Co., 1 Ferry, N. Y. 32
Peck Milo & Co., New Haven, Ct. 27
The Stiles & Parker Press Co., Middletown, Ct. 31

Pressure Blowers. *Makers of.*
Sturtevant B. F., 72 Sudbury, Boston 31

Pumps, *Makers of.*
Douglas W. & B., Middletown, Conn. 7
Rumsey & Co., Seneca Falls, N. Y. 7
Union Mfg. Co., 55 Chambers, N. Y. 7
Valley Mch. Co., Easthampton, Mass. 7

Pyrometers.
Brown Edward, 311 Walnut, Phila. 21

Railroad and Miners' Tools.
Hogan, Clark & Sleeper, Boston 9

Rails, *Importers of.*
Cooper Chas. & Son, 104 and 106 John, N. Y. 28
Smith Gilead A. & Co., 62 Broadway, N. Y. 4

Rails, Iron or Steel, *Makers of.*
Atkins Bros., Pottsville, Pa. 6
Cambria Iron Co., Johnstown, Pa. 5
Cleveland Rolling Mill Co., Cleveland, O. 6
Evansville Rolling Mill Co., Evansville, Ind. 6
Griswold John A. & Co., Troy, N. Y. 28
Milwaukee Iron Co., Milwaukee, Wis. 6
Springfield Iron Co., Springfield, Ills. 4
Joliet Iron & Steel Co., Joliet, Ills. 6

Razor Straps, *Makers of.*
B. F. Badger, Charlestown, Mass. 3

Refrigerators.
Jewett John C. & Sons, Buffalo, N. Y. 11

Rolling Mill Machinery, etc., *Manufacturers of.*
Moore James, Cor. 16th and Buttonwood, Phila. 31

Rolls, Chilled and Sand, *Makers of.*
Garrison A. & Co., Pittsburgh, Pa. 4

Rules, *Manufacturers of.*
H. Chapin's Son, Pine Meadow, Ct. 7

Sash Chain.
Thomas Morton, 15 Murray, N. Y. 20

Saws, *Makers of.*
Atkins E. C. & Co., Indianapolis, Ind. 10
American Saw Co., 1 Ferry, N. Y. 10
Boynton E. M., 80 Beekman, N. Y. 10
Flint J., Rochester, N. Y. 10
Disston Henry & Sons, Phila. 10
McNeice Wm., 515 Cherry, Phila. 10
James Ohlen, Columbus, O. 10
Peace Harvey W., Williamsburg, N. Y. 10
Spear & Jackson, 116 Duane, N. Y. 25
Wheeler, Madden & Clemson, Middletown, N. Y. 10
Woodrough & McParlin, Cincinnati, O. 10

Saw Frames, Wood, *Makers of.*
Peace Harvey W., Williamsburg, N. Y. 10

Scales, *Manufacturers of.*
Richie Bros., 9th near Coates, Phila. 31
Shattuck W. F. & Co., 113 Chambers, N. Y. 7

Scissors, *Manufacturers of.*
Rowe & Post, 120 Chambers, N. Y. 11

Screws, *Makers of.*
American Screw Co., Providence, R. I. 15
Miles F. S., 208 Quarry, Phila. 14

Screws, *Importers of.*
Bruce Geo. W., 1 Platt, N. Y. 6
Field Alfred & Co., 47 John, N. Y. 12
Gueutal George, 39 W. 4th, N. Y. 10

Self Oilers.
Nathan & Dreyfus, 108 Liberty, N. N. 32

Shovels, &c.
Clement & Hawkes Mfg. Co., Northampton, Mass. 32

Skates.
Graham & Haines, 88 Chambers, N. Y. 36

Smelting Works.
Reeves Paul S., 760 South Broad St., Phila. 32

Stamped and Japanned Tin Ware.
Jewett John C. & Sons, Buffalo, N. Y. 20
Scheider Jos. & Co., 58 Beekman, N. Y. 14
Shepard Sidney & Co., Buffalo, N. Y. 23

Steam Hammers, etc., *Makers of.*
Dudgeon Richard, 24 Columbia, N. Y. 31

Snaps, Harness. *Makers of.*
Middletown Tool Co., Middletown, Conn. 12

Speed Indicators, *Makers of.*
Connecticut Cutlery Co., Naugatuck, Conn. 15

Squares, Steel and Iron, *Makers of.*
Hart, Bliven & Mead Mfg. Co., 243 Pearl, N. Y. 9

Steam Pumps, etc., *Manufacturers of.*
Carr A. 43 Cortlandt, N. Y. 30
Guild & Garrison, Williamsburgh, N. Y. 24
Hall C. Henry & Co., 29 Cortlandt, N. Y. 8
Philadelphia Hydraulic Works, Evelina street, east of Third street, Phila. 31

Steam Traps.
Alonzo L. Jones, 150 S. 4th, Phila. 25

Steel Importers.
Carr J. & Riley, 82 John, N. Y. 28
Cocker Bros., Sheffield, England 34
Hobson Francis & Son, 97 John, N. Y. 28
Jessop Wm. & Sons, 91 and 93 John, N. Y. 28
Moss F. W., 80 John, N. Y. 28
Piersons & Co., 24 Broadway, N. Y. 4
Sanderson Bros. & Co., 16 Cliff, N. Y. 28
Sanderson Geo. & Co., 57 John, N. Y. 28
Van Wart & McCoy, 43 Chambers, N. Y. 28
Wardlow S. & C., 13 Gold, N. Y. 28
W. Hawksworth, Ellison & Co., 72 John, N. Y. 28

Steel Manufacturers.
Anderson & Woods, Pittsburgh 29
Chrome Steel Co., Brooklyn, E. D. 29
Cleveland Rolling Mill Co., Cleveland, O. 6
Gautier D. G. & Co., Jersey City, N. J. 28
Griswold John A. & Co., Troy, N. Y. 34
Hussey, Wells & Co., Pittsburgh 29
Miller, Barr & Parkin, Pittsburgh 29
Reese, Graff & Woods, Pittsburgh 29
Relter, Lavelly & Co., Pittsburgh 29
Rowland Wm. & Harvey, Frankford Phila. 32
Singer, Nimick & Co., Pittsburgh 28

Stone Crushing Machines.
Blake Crusher Co., New Haven, Ct. 9

Stove Boards, *Manufacturers of.*
Shepard Sidney & Co., Buffalo, N. Y. 23

Stove Polish, *Makers of.*
"Gem" Stove Polish, 173 Forsyth, N. Y. 32

Twist Drills, *Makers of.*
Morse Twist Drill & Mach. Co., N. Bedford, Mass. 27

Tackle Blocks, *Makers of.*
Burr & Co., 81 Peck Slip N. Y. 31

Tacks.
American Tack Co., 117 Chambers, N. Y. 26
Field A. & Sons, Taunton, Mass. 9
Grundy & Kenworthy, 165 Greenwich, N. Y. 26
Dunbar, Hobart & Whidden, S. Abington, Mass. 26
Loring Samuel, Plymouth, Mass. 26

Tea Trays, *Importers of.*
Dickinson Henry, 66 and 68 Reade, N. Y. 11

Trowels, etc., *Makers of.*
Rose Wm. & Bros., 36th and Filbert, W. Phila. 10

Turbine Water Wheels, *Manufacturers of.*
Stout, Mills & Temple Dayton, O. 20
Whitehill, Smith & Co., Newburgh, N. Y. 30

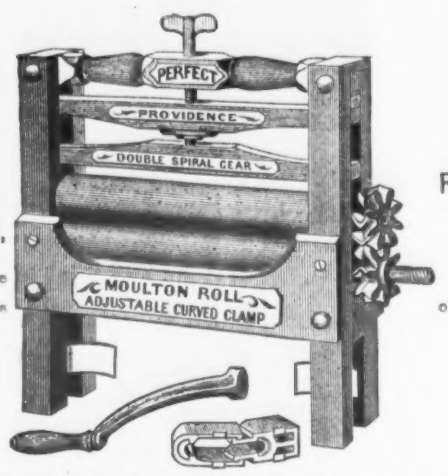
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Dudgeon Richard, 24 Columbia, N. Y. 24

Valves, Gas, Water and Steam.
Ludlow Valve Mfg. Co., N. Y. 31

Vises.
Backus Vise Co., 78 Beekman, N. Y. 25
Fisher & Norris, Trenton, N. J.

PROVIDENCE TOOL CO.,

The Providence Wringer.



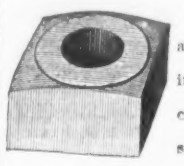
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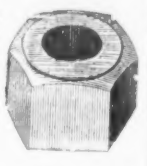
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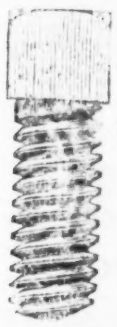
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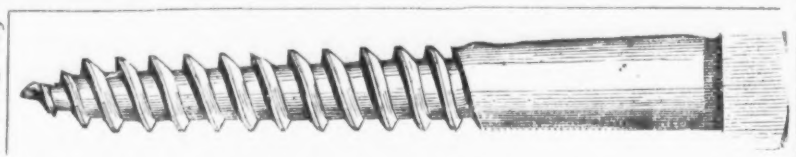
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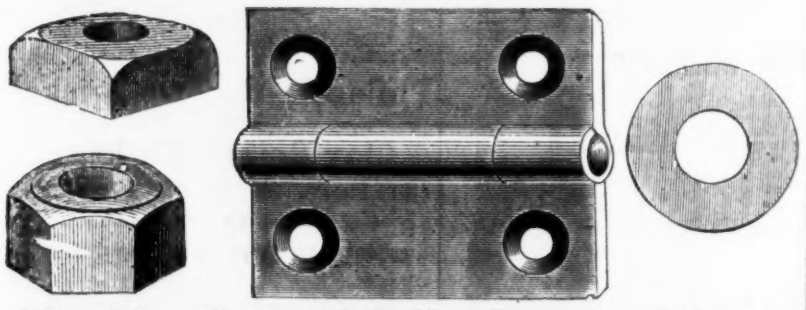


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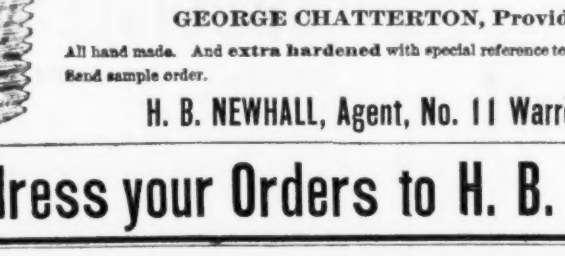


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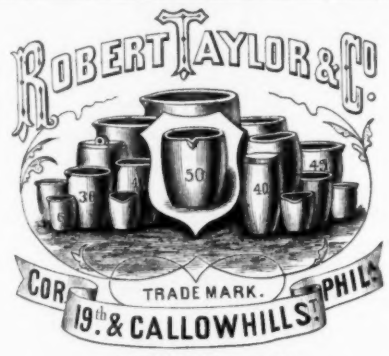
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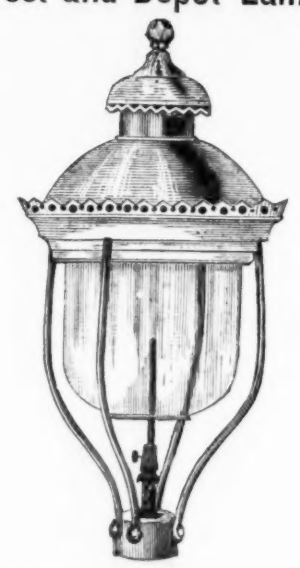
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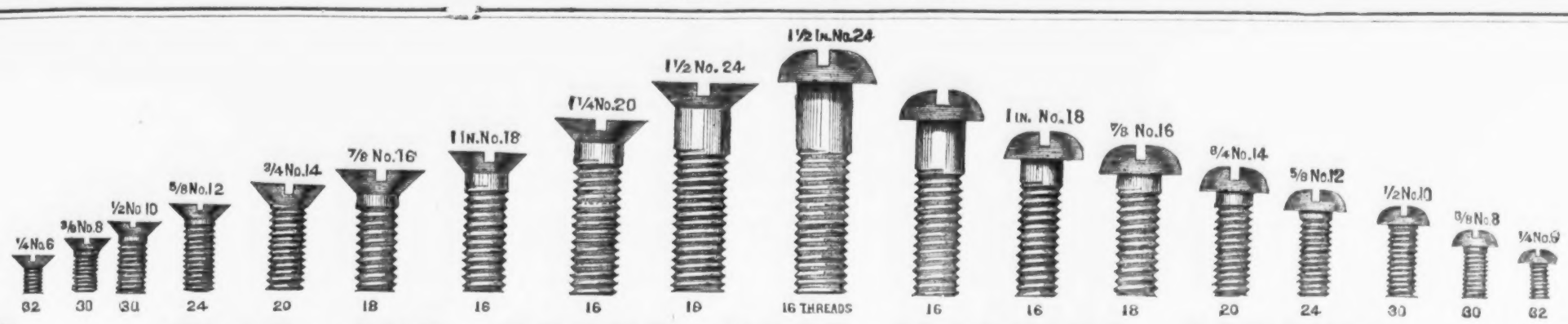


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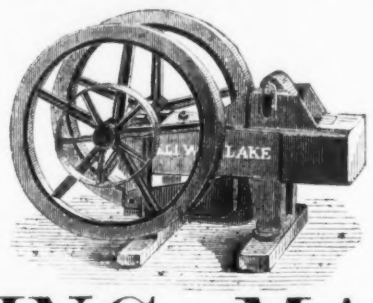
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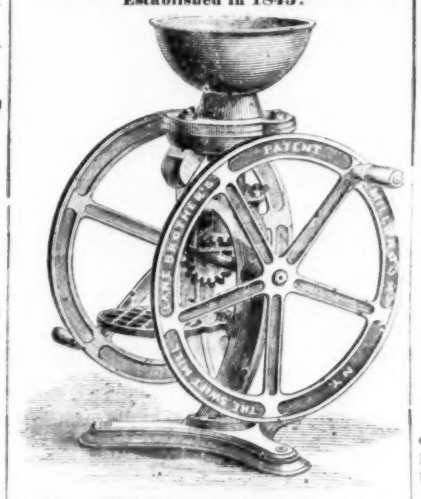
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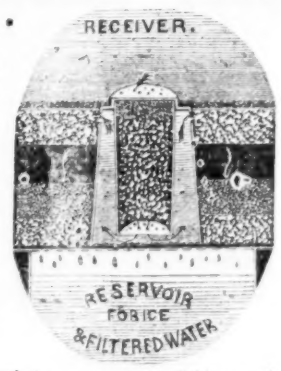
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New York, Thursday, February 5, 1874.

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JAMES C. BAYLES . . . . Editor.
JOHN S. KING . . . Business Manager.

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The Probable Future Course of the World's Iron Trade.

During the past two years we have frequently expressed the opinion that the time was not far distant when the United States would enter into competition with Great Britain for the trade of the world in iron and manufactures of iron. These predictions were made, it is true, at a time when our iron industries were expanding and developing with a rapidity almost startling, and when there was but little reason to anticipate the sharp and sudden check they have since experienced; but we see nothing in the events of the past six months, nor in the present situation, to weaken our confidence in the opinions we then expressed. That we have the capacity for a production of iron equal to all the demands which, in any event, are likely to be made upon us, no one will deny who knows anything of the extent and geographical distribution of our resources of ores and coals; what the demands upon us are likely to be, depends upon the ability of Great Britain to maintain an increase of production proportionate to the increase in the consumptive requirements of countries depending wholly or in part upon her iron markets.

About two years and a half ago the price of iron in England began to advance, owing to the advance in the price of ores, coals and labor. It was generally believed that this condition of affairs would be of brief duration, for the reason that high prices for iron would have the double effect of stimulating production and reducing the foreign demand, thus causing an accumulation of stocks which must soon break the market. That these anticipations have not been realized in any respect, is shown by the following statistics of production and stocks for a series of years:

	Product'n of Pig Iron in Great Britain. Tons.	Total stock Dec. 31 in Scotland & North of Engl'd. Tons.
1867	4,761,023	644,345
1868	4,970,206	720,927
1869	5,445,757	735,607
1870	5,963,515	782,345
1871	6,627,179	558,331
1872	6,741,929	235,628
1873 (est.)	6,850,000	200,328

From this it will be seen that the production during the past two years has been in a decreasing ratio, as compared with the years immediately preceding, owing to causes so fully explained in previous articles on this subject that we need only mention them briefly. They are the deficiency in the ore supply, which has necessitated large importations of ores from other countries, chiefly Spain; the scarcity and high price of coal, and the labor troubles—difficulties which must every year become more serious. It is also interesting to note that during the past three years stocks have been reduced nearly 600,000 tons, showing that the current production has not been sufficient to meet the current consumptive and export demand. To show the imperative character of the latter, it is only necessary to examine the export statistics for a series of years, which make the following showing:

TOTAL EXPORT OF BRITISH IRON.

	Tons.	Value.
1867	1,968,025	£15,050,391
1868	2,041,852	15,096,398
1869	2,675,831	19,519,201
1870	2,825,575	24,038,090
1871	3,169,219	26,124,134
1872	3,382,762	35,996,167
1873	2,959,314	37,779,586

From this it appears that during the past three years the foreign consumers of British iron have paid for their supplies about £30,000,000 more than the price at which the same quantity of iron could have been purchased during any of the four years preceding.

Now, let us examine these statistics and discover, if possible, their true significance. Since 1871, with every inducement of high prices to stimulate production, the make of pig iron in Great Britain has increased less than 225,000 tons. During this time her exports have been maintained at the expense of a reduction in stocks by nearly 600,000 tons. At the end of 1873 the total stocks in Scotland and the North of England amounted to but little over 200,000 tons. Clearly, England is not keeping up with the demands upon her iron producing capacity. Will she be able to do so in future, or are the causes which have retarded the development of her iron production permanent in their nature and operations?

The scarcity of good ores, which has necessitated partial dependence upon foreign sources of supply, is an obstacle to the further development of iron manufacture in Great Britain which is constantly becoming more serious. There is no possibility of largely increasing the home production of good ores, and iron masters who do not own or control ore beds will find themselves more and more dependent each year upon precarious foreign sources of supply, from which they may be at any time cut off by the calamity of war. The coal question presents itself in an aspect somewhat different. The only reason for the present scarcity of fuel is found in the unwillingness of the miners to cheapen coal by a production equal to the requirements of the market, and the recent inquiry before the Select Committee of Parliament failed to discover any practicable method of increasing the output of the mines. The mine owners have no reason to complain of the situation, and so long as they share with the miners the pecuniary profits of high prices for a scant production, they are not likely to adopt any means for increasing the output. For the present, at least, they are satisfied. Of the labor difficulties in the iron trades our readers have been well informed. That wages will be maintained at present average rates is, perhaps, doubtful, but that they will never go back to old rates is generally admitted. The drain upon the skilled labor of Great Britain in the annual emigration to this country, has been seriously felt in many branches of iron manufacture, and the supply is no longer in excess of the demand in seasons of ordinary activity. This is an obstacle to cheap and abundant production which must become more formidable every year. What, then, is the outlook for the iron industries of Great Britain? Certainly, not encouraging for the immediate future; still less so for coming years. The causes we have noted are combining to check the development of iron production in Great Britain at a time when a rapid and sustained increase in the world's consumption of iron may be confidently expected. Countries hitherto but small consumers have caught the inspiration of progress, and are developing their resources, building railroads, bridges and aqueducts, and engaging in manufactures. Throughout Central, Southern and Eastern Asia the thrill of a new life is felt, and semi-barbarism is developing into civilization; in South America many States give promise of a rapid and sustained material progress, and some have already attained a development of civilization of which the people of other countries have but little idea; and even in the heart of Africa the steam whistle will be heard when the enterprising Khedive of Egypt shall have consummated the important engineering operations he has already undertaken. All this requires iron, which is, and probably always will be, the prime element of a progressive material civilization. If Great Britain cannot supply this iron, where is it to come from? These is but one answer to this question—the United States must supply the deficiency of England's production; and when we shall have fairly entered into competition for the world's iron trade, why should we, with our capacity for a production limited only by the requirements of trade, long occupy the second place in the list of iron producing countries?

It may be said that these vague and indefinite predictions of the future have no present interest. Certainly, we do not look for their immediate fulfillment, but if they are based upon a correct conception of the present condition and probable future course of the world's iron trade, they possess an interest and an importance which entitle them to careful and thoughtful consideration.

National Aid for the Centennial.

The application of the Centennial Commissioners for aid from the national treasury has called out a great deal of unjust and ungenerous criticism in certain quarters. The promoters of the enterprise in Congress are accused of having played a shrewd game in securing recognition of the Centennial project from the national government, under the plea that the funds needed to carry it out were to be raised by subscription, only to come back upon Congress at the last moment with a demand for money to avert the national humiliation and disgrace which would result from the failure of an enterprise nationalized by Act of Congress and executive proclamation. These ill natured critics do not hesitate to assert that the promoters of the Centennial knew that the funds could not be raised by subscription, and that government aid would be necessary in carrying it out: but that they first induced Congress and the President to commit themselves to the project, that they might make a demand for aid, which, if asked for in the first instance, would have been refused.

Now we do not feel ourselves called upon to champion the Centennial Commissioners against honest newpaper criticism: but we think that, in charging them with duplicity in securing such recognition for the exhibition as Congress and the President have already accorded to it, the *Tribune* and certain other influential journals have done them a great injustice. When the idea of celebrating the centennial anniversary of American Independence with a grand international industrial exposition first took shape as a fixed project, it was believed that the people of all parts of the country would take an active interest in assuring its success. The interest of those who first committed themselves to the movement amounted to enthusiasm, and as representative men of nearly all the States were included among this number, it was confidently believed that no trouble would be experienced in securing subscriptions to the full amount of the stock for which provision could not be made in Pennsylvania. To the patriotism and liberality of the people of the United States the appeal was made. But, as a popular satirist once remarked, patriotism is a disease which spreads with alarming rapidity until it reaches the pocket, and then suddenly subsides. The people were pleased with the idea of a Centennial Exhibition, and not displeased with the choice of Philadelphia as the city in which it was to be held, although the people of the Mississippi Valley thought that a point much nearer the geographical center of the Union should have been chosen. There were, however, no sectional or local jealousies created that were strong enough to endanger the success of the project, and all went well until an effort was made to place the stock which had been apportioned to the different States. Then it was found that the friends of the Centennial had relied too much upon the patriotic impulses of the people. Pennsylvania had responded liberally to the call for money, and Philadelphia did more than her share; but, this accomplished, the Board of Finance had nearly, if not quite, exhausted the possibilities of private subscription. Those who undertook the difficult task of popularizing the Centennial stock discovered, as they traveled North, South and West, that the interest in the great enterprise diminished in a ratio proportionate to the distance from Philadelphia. It is probable they would have succeeded in some degree, however, had it not been for the panic. For months before the storm burst, a feeling of uneasiness and undefined apprehension pervaded the business community, and while there was plenty of capital for speculations which promised quick returns, there was but little for investment in Centennial stock, which can scarcely be expected to pay a dividend under any circumstances, whatever benefit may result to the nation at large from the exhibition. When the panic came the last hope of seeuring sufficient aid from the people of the country was swept away. But there was no time to be lost. The exhibition could not be postponed, and Congress must come to the rescue of the Centennial or allow it to fail utterly as a national exhibition.

That the friends of the Centennial were over sanguine in their expectation of carrying the great undertaking to a successful issue in the way proposed, is evident. We thought so at the time, and expressed our opinion as freely as the circumstances warranted; but we are satisfied that those who asked Congress to sanction the Centennial by the passage of the act under which the commissioners were appointed, fully believed that they could inspire the people of the country with the enthusiasm they felt. They have failed to do so, but through no fault of theirs.

That Congress will grant the assistance needed to place the Centennial beyond any danger of failure, is now well assured. It should have made an appropriation when it nationalized the enterprise, or else have refused to recognize it at all. The people should never have been asked to pay the expenses of the exposition, and now that the plan has been tried, and has failed, Congress should assume the necessary expenses of the Centennial on behalf of the nation. At least, it should promptly guarantee the commissioners against further financial embarrassments, and we have no idea it will be deterred from so doing by the ill natured "I told you so" of those who now profess to have discovered duplicity and sharp practice on the part of those who asked Congress to sanction the undertaking.

Patterns and Trade Marks.

On another page of this issue will be found matter of much interest relating to patterns and trade marks. Mr. Sumner's bill, "for the better security of property in patterns for metal castings," is designed to cover a point not provided for in the existing patent and copyright laws. The bill is presented largely, if not chiefly, in the interest of stove founders. Under existing laws, forms and ornamentations are secured from imitation, but this does not protect stoves from infringement. Three-fourths of the plates used in the construction of a cooking stove are plain. These may be taken by a founder, and, after dressing with a file, used as patterns. For the remaining fourth he requires patterns of his own making, but it is only necessary for him to make them slightly different in appearance from the iron plates he wishes to imitate, and he has a stove complete without the labor or expense of making experiments. It is to prevent one maker using as patterns plates taken from another maker's stoves, that this bill has been framed, and we can see many reasons why it should become a law. The intent of existing statutes for the protection of inventors and manufacturers is to secure to those who invent or manufacture new and useful articles the benefits of their labors. If a chance is left open to unprincipled persons by which they may evade the intent of the law, without rendering themselves liable to the penalties it imposes, a statute should be enacted to cover it.

In connection with the text of this bill, we present an able and interesting article on the legal effect of the registration of trade marks, by Mr. Rowland Cox, of Washington, D. C., Editor of American Trade Mark Cases.* Mr. Cox's views on this subject, formed from an intimate knowledge of the practice of the courts, are of much interest to manufacturers. Appended to this is so much of the act of July 8th, 1870, to which Mr. Cox makes reference, as relates to the subject under consideration. A careful perusal of Mr. Cox's article will give the reader a correct idea of the subject, and possibly save him a great deal of money which might otherwise be spent in Attorney's fees in finding out what rights in the use of trade marks are recognized by the courts, and how those rights may be protected.

* Published by Messrs. Robert Clarke & Co., Cincinnati.

The National Association of Stove Manufacturers.

The third annual meeting of the National Association of Stove Manufacturers of the United States will be held in Geological Hall, corner of State and Dodge streets, Albany, on Wednesday, February 11th, at 10 o'clock a. m. There are many reasons why this meeting should be well attended. Since the last meeting of the Association great and important changes have occurred in the conditions affecting the general business of the country, and in view of the decline in iron and wages it is both necessary and desirable that the price of stoves should be adjusted on a new basis. This subject demands the most careful and intelligent consideration on the part of the trade, to the end that a minimum price may be agreed upon as satisfactory to both manufacturers and buyers as was the price adopted at Pittsburgh a year ago, and left unchanged at the Niagara meeting last summer. That there will be some differences of opinion as to the new rate, is to be expected: but it is distinctly stated in the call for the meeting that no member of the Association will be bound by the will of the majority to any course which he does not approve. Other and important questions will also come up for consideration, and the meeting will be of unusual interest to the trade. It is, therefore, to be hoped that the attendance will be large.

The National Association of Stove Manufacturers is now a thoroughly representative body. Its membership includes all but a small percentage of the stove manufacturers of the United States, and it has been instrumental in greatly benefiting the trade by adjusting a basis upon which a free and unrestricted competition may be maintained without imposing upon makers the necessity of selling their goods at prices below the cost of production to defeat the schemes of reckless rivals. A return to the old method of business would benefit neither manufacturers, dealers nor consumers of stoves, and the interest of the whole trade demands that the Association be maintained, at least until it shall have ceased to be useful, and that time has not yet come.

The Centennial.

By the President of the United States.

EXCECUTIVE ORDER.

Whereas, It has been brought to the notice of the President of the United States, that in the Internation a Exhibition of Arts, Manufactures and Products of the Soil and Mines, to be held in the city of Philadelphia in the year 1876, for the purpose of celebrating the one hundredth anniversary of the Independence of the United States, it is desirable that from the executive department of the government of the United States in which there may be articles suitable for the purpose intended there should appear such articles and materials as will, when presented in a collective exhibition, demonstrate the administrative facilities of the government in time of peace and its resources as a war power, and thereby serve to demonstrate the nature of our institutions and their adaptation to the wants of the people:

Now for the purpose of securing a complete and harmonious arrangement of the articles and materials designed to be exhibited from the Executive Department of the government, it is ordered that a board to be composed of ten persons, to be named by the head of each of the exucutive departments which may have articles and materials to be exhibited, and also of one person to be named on behalf of the Smithsonian Institution and one to be named on behalf of the Department of Agriculture, to be charged with the preparation, arrangement, and safe-keeping of such articles and materials as the heads of the several departments and the Commissioner of Agriculture and the Director of the Smithsonian Institution may respectively decide shall be embraced in the collection. That one of the persons thus named to be designated by the President shall be chairman of such Board, and that the Board appoint from their own number such other officers as they may think necessary, and that the said Board, when organized, be authorized, under the direction of the President, to confer with the executive officers of the Centennial Exhibition in relation to such matters connected with the subject as may pertain to the respective departments having articles and materials on exhibition; and that the names of the persons thus selected by the heads of the several deparments, the Commissioner of Agriculture and Director of the Smithsonian Institution shall be submitted to the President for designation

By order of the President.

HAMILTON FISH, Secretary of State.

Washington, January 23d, 1874.

The Cleveland Iron District.—The Cleveland (England) Ironmasters' Association returns for the month of December have just been issued. It appears from these that out of 139 blast furnaces in the North of England, 132 are in operation. There are nineteen new furnaces being built, as follows: Bolckow, Vaughan & Co. are building one new furnace at Eston; Thomas Vaughan & Co. are building two new furnaces at South Bank; Hopkins, Gilkes & Co., Limited, are building two new furnaces; Bell Brothers, Limited, are building four new furnaces at Port Clarence; T. Richardson & Sons are building one new furnace at West Hartlepool; George Wythes & Co. are building one new furnace; Rosedale & Ferry Hill Iron Co. are building two new furnaces. The Weardale Iron Co. are building two furnaces at Tudhoe; Robson, Maynard & Co., are building two new furnaces at the Redcar Iron Works, Coatham. The Loftus Iron Co. are building two new furnaces at Skinningrove.

The comparative statement for the years 1868 to 1873 is shown as follows:

	Make of Pig.	Makers' Stocks, December 31.	Stock in Warrant Stores, December 31.
	Tons.	Tons.	Tons.
1868	1,233,418	80,898	72,029
1869	1,459,508	84,243	31,364
1870	1,695,377	104,606	12,739
1871	1,884,239	65,601	2,730
1872	1,968,972	40,697	931
1873	1,999,491	80,328	nil.

Alloys of Iron and Manganese.

The following account, from the *Engineer*, of a new process by which iron and manganese have been combined, will be read with interest:

For some time the directors of the Terre Noire iron works, in France, have been occupied with experiments in the mixture of iron with manganese, and the specification of their patent is now published.

If, according to the specification, filings or turnings of iron, steel, or cast iron, even iron sponge roughly broken up, or any other kind of iron or steel in a similar state of division, be mixed with ore containing manganese, tungsten, or titanium, or any or all of these metals united, or with quartz, the ores or quartz being finely pulverized and mixed in the proper proportions for the alloy desired, and if this mixture be regularly and thoroughly moistened with a solution of ammonia, or slightly acidified water, and, finally, if this mixture be firmly compressed either by hand or other means into an iron mold, a large amount of heat will be envolved, and after some hours if the mold be opened a compact and very hard mass will be formed, which may be broken up with a hammer to the size required. These fragments maintain themselves at a red heat, and only disaggregate themselves at the fusion point of cast iron. By treating them in a blast furnace, alloys of iron with manganese, in any proportion, from 25 per cent. to 50 per cent. of the latter metal may be obtained; also, in the same way alloys of iron with tungsten or titanium, or with any or all of these metals. But these alloys can only be produced at very high temperature, and the blast must be ejected in very hot, and under great pressure.

In consequence of these conditions the furnace is seriously tried, especially in the lower parts, and to avoid accident should be constructed in the following manner: The furnace itself should be built of very hard fire-clay bricks, in which aluminum dominates, the lining of lime, manganese, or pure alumina, and a crucible is made in the following manner: A mixture of pure graphite, or gas coke, carbon and tar, is put into a strong plate iron mold, which can be perfectly closed, and which is then submitted to a low red heat for several hours. By this means a compact hard mass is produced without fissures or joints. The crucible is movable, and is merely set against the lower part of the lining of the furnace, and secured by lumps of fire-clay. Arrangements are made by which any part of the furnace may be repaired or replaced with facility. The blast is heated to at least 350° C., and the pressure carried to 13 to 15 centimeters of mercury.

This ferro-manganese is not a new product, it has been produced at least by two different modes—that of Prieger, which is effective in a crucible, and that of Henderson, in which a regenerative furnace is employed. These two processes are founded on the simultaneous reduction of a mixture of pulverized ores of iron and manganese in presence of finely divided charcoal. The presence of iron in the mixture determines the complete reduction of the oxide of manganese for which it is indispensable. It is well known how difficult it is to obtain metallic manganese in the laboratory, and how much fuel and time are consumed in obtaining the complete reduction of the oxide of manganese with charcoal alone. In consequence of the pulverulent condition of the mixture and the poorness of the bed of fusion, which must contain an excess of charcoal, these processes can only produce small quantities of the metal per day, and at the cost of an enormous consumption of fuel.

Attempts have been made to find a process of a more practical nature, which should effect successively and more rapidly, first, the reduction of the oxide, and afterward the fusion of the alloy. With this view a vertical apparatus was designed, something like a blast furnace, in which ores of iron and manganese were introduced, and alloys were produced containing sometimes as much as 18 per cent. of manganese; but it was found that the particular kinds of ore required for the purpose were so rare that the process could not be carried out with success. Other means have also been resorted to, the materials have been made up into bricks, and exposed in that form to the fire, but not successfully. Still, some such process is said to be much employed in Germany, the alloy produced containing, according to analysis, 30 per cent. of manganese, 35 per cent. of iron, and 5 per cent. of carbon.

The Terre Noire directors assert by that process above described they have succeeded in producing the long sought alloy in a practical and economic manner.

An improvement in steel furnaces is claimed by G. Nimmo, of Glasgow, Scotland. The improvement consists substantially in constructing crucible steel furnaces, with an outer iron casing and lining of fire-brick, and a thin inner coating or "fettling" of fire clay or ground broken crucibles or fire-brick, or a mixture of these, at the upper furnace part, above the close ashpit; each furnace erected at a little distance apart, ranged in sets of from two to twelve, along one or both sides of the steam boiler or boilers, so that the top of the furnaces and their back conducting flue would be below, and conduct the escaping hot gases through into the heating chamber and flues of the boiler, so as to generate the steam necessary for driving the motive engines and machines of the air blowers, rolls, steam hammers and other machinery of the steelwork. The draught and blast of the furnaces is regulated by a branch with a controlling valve led into the lower close ashpit of each from the main air blast pipe, and by a damper on the outlet flue of the furnaces which conducts the escaping hot gases either through the heating flues of the steam boilers or direct to the chimney, as may be desired. While to enable each furnace to be cooled down quickly, or nightly, to be freshly lined or "fettled" with the inner thin lining every morning, or as often as desired, the grate or fire bars are carried on two end or cross bars held up by joint bolts or pins, which are easily withdrawn from the ashpit door in front, so as to let the fire and grate bars tumble down for cooling. Each furnace would preferably be made narrow, so as to hold two pots or crucibles in the width, but two, three, four, five or more in a row, in the length out from the back wall supporting the steam boilers and along which the furnaces were ranged.

Special Notices.

International Exhibition, 1876.

To Contractors, Builders, Lumber Merchants, and others whom it may concern:

The United States Centennial Board of Finance will receive Proposals for the supply of Lumber, Iron and other materials, and for the execution of certain works required in the erection of the Main Exhibition Building, covering 20 acres, in Fairmount Park, Philadelphia.

Plans and specifications for the same may be seen on and after February 9th, 1874, at the Office of the Centennial Board of Finance, No 904 Walnut St., Philadelphia; and sealed bids, in conformity with the specifications, will be received for the whole or part of the Building up to noon on February 23d, 1874, at the same place.

Information as to the nature and extent of the work may now be obtained at the office of the Architects, Messrs. VAUX & RADFORD, No. 110 Broadway, New York.

JOHN WELSH, President.
FREDERICK FRALEY Secretary.
Centennial Board of Finance.
Approved A. T. GOSHORN, Director General.

To the Trade.

HARDWARE TRADE REGISTER.

1874.

Owing to the backward state of trade occasioned by the late panic, we have deemed it advisable to defer the issue of our Trade Register until a later period than usual in order to give its benefits to the trade of next season.

It having come to our knowledge that certain parties, evidently having no reputation of their own, are endeavoring to trade upon our already established reputation, by assimilating our title, and even, in some instances, from what we understand, using our last edition for canvassing purposes, we respectfully anounce to the trade that we are now canvassing for our next edition, which will contain additional features of interest calculated to make it still more valuable than it already is, and render it indispensable as a work of reference to the trade, **and we ask them to withhold their advertising favors until our agent may call upon them.**

Please Notice that we always have a printed form, bearing our address 4 & 6 Warren St., for orders for advertisements, and that they are payable only to the order of the Manager.

The Merchants and Manufacturers Agency,
(MERCANTILE.)
No. 4 & 6 Warren St., N. Y., Publisher.

CAUTION.

No advance payments required for regular advertisements; but **all small matter is payable in advance.** And our only authorized agents to collect money are invariably provided with a certificate of authority, bearing our official seal, and signed by the manager, and are instructed always to give our printed receipt stamped with our seal and countersigned by the party receiving the money.

S. W. THOMPSON, Manager.

"ENGINEERING,"

A Weekly Illustrated Journal, edited by **W. H. MAW and JAMES DREDGE.**

OFFICES, { 37 Bedford St., Strand, London, W. C. / 52 Broadway, New York.

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Representative in United States.

This most successful English Engineering Journal, containing thirty-six pages, weekly, illustrating the latest advances in Civil, Mechanical, Mining and Military Engineering Science, both in Europe and America, can now be obtained by American subscribers, post paid, for $9·50, currency, per year, sent to the New York office of the Journal.

All the important details of the buildings and novel machinery at the great Vienna Exposition will be illustrated and described in *Engineering* the current year; and this, with illustrations of all the larger American engineering structures, will render it invaluable to every American Engineer, Architect, Iron Master and Machinist.

The best medium for advertising American Machinery to the attention of European capitalists.

Send for specimen copy, free.

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NEW YORK, July 1, 1873.

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Book form, Common and Philadelphia Lists, 20 discounts.

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Iron Screws, 13 discounts.

PRICE REDUCED.

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Translations and Condensations.

The undersigned, commercial Editor of *El Cronista*, the Spanish Grvernment paper in this city, and Foreign Editor and Translator of the *Daily Bulletin*, has made it a specialty for years past to translate industrial matter with the strictest adherence to the technical wording, from and into English, German Spanish and French, for manufacturers, patentees and others, and begs to be recommended to the iron masters and trade in that capacity.

C KIRCHHOFF, Box 2806, Post Office.

Latest Publications translated by C. KIRCHHOFF. "German Imperial Consular Instructions." "Cuba may become Independent." Officially endorsed by the governments of Germany and Spain.

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Consultation gratis.

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A MACHINIST, MECHANICAL ENGINEER and Draughtsman, a fair Mathematician, who has had many years' experience as journeyman, foreman and engineer, and who understands mine surveying and book keeping, desires a situation in any healthy locality. Unexceptionable reference.
Address *"ENGINEER,"*
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By a Jobbing Hardware House, a competent salesman who can sell from $25,000 to $50,000 near by trade.
Address **E. T.,**
Office of *The Iron Age*, 10 Warren Street, N. Y.

The advertiser having had several years' experience in the management of a steel and hardware house, desires a position where a reliable man with a business connection will be of service.
Address, **B. B.,**
Box 1699 P. O., New York.

Wanted,

A young or middle aged active and energetic partner, with twenty to forty thousand dollars capital, in an old established and well paying wholesale business in a healthy Western city. Best of references given and required. Address, **B.,**
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10 Warren Street, N. Y.

ROLLING MILL.

We have the machinery for a bar mill, which we wish to put in operation at Lockville, Chatham county, North Carolina. Lockville is on the Raleigh and Augusta Air Line Railroad and the Deep River, ten miles below the Egypt Bituminous Coal Fields. The climate is mild and the location desirable. A mill at that place would command all the local trade of the State. A person or persons having a knowledge of the business, and capital sufficient to work it, wanted to take an interest. Inquire of
J. M. HECK, Prest.
Deep River Mfg. Co., Raleigh, N. C.
Or **GEO. G. LOBDELL,**
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THE
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FOR FORGE AND FOUNDRY USE.

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The subscribers, doing a large and old established business in Stoves, Tin and General Hardware, have completed a large brick addition to their premises, and are prepared to receive proposals from manufacturers desirous of introducing their goods to the Maritime Provinces. Our facilities for doing a large commission business in Agricultural Implements, Register Grates and Mantles, Stoves, Furnaces, and Hardware Specialties, are unsurpassed by any firm in the British Provinces. Address,
BOWES & EVANS, Canterbury & Church Sts.,
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FULLER BROS.
Importers of
ENGLISH HARDWARE,
HAVE REMOVED TO
89 Chambers St. & 71 Reade St., N. Y.

Co-Partnership Notice.

PHILADELPHIA, January 1, 1874.

W. R. Gurnis is this day admitted as a partner in our firm. The style of the firm remains as heretofore.
MALIN BROTHERS,
Iron Commission Merchants,
No. 228 Dock Street.

CHARCOAL IRON.

Parties owning a large and very superior Furnace, 90 miles from Cincinnati, and an unlimited supply of the best Iron Ore, adjoining it, with abundance of timber for making Charcoal, wish to enter into arrangements with men of experience and means to run the Furnace for a term of years, under arrangements to be agreed upon. There is no place in the United States where Charcoal Iron can be made at as low a cost, or where transportation to market will cost less. Apply to
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Rolling Mill,

$30,000 to $50,000 Capital Wanted in a Rolling Mill, capacity 25 tons per day. Well located, within 40 miles of New York by water and railroad communication. Apply to or address,
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Special Notices.

Map of the Mineral Resources of Chattanooga, Tennessee, and Vicinity.

Compiled from surveys made with a special view of showing the location and boundaries of the three different kinds of Iron Ores and Coal Measures lying within a radius of about one hundred and twenty-five miles of Chattanooga. It also shows the different Railroads and Navigable Rivers and principal towns within this district, and routes to Washington, New York, Louisville, St. Louis, Cincinnati, Memphis, New Orleans, Mobile, and principal ports on the Atlantic Coast. This map is not published in the interests of any individuals nor landed proprietors, but with the view of showing to parties who may be interested in the manufacture of iron a section of country containing three different kinds of Iron Ores (which are shown in different colors), as well as coal in the greatest abundance, and their relative positions to each other. The map is gotten up by the publisher after an intimate knowledge of the country for twelve years, the last year of which he has employed two competent engineers in making special surveys, with a view of making it as nearly accurate as possible. It is about 27 inches by 36 inches in size, upon a scale of 15 miles to one inch, and printed on firm linen paper and put up in cases. It will be sold by subscription only, at the price of five dollars, and will be ready for delivery about the 25th of January next. Subscriptions can be made to the publisher, S. B. LOWE, Chattanooga, Tennessee, to the *American Manufacturer*, Pittsburgh, Pa., or to H. B. NEWHALL, No. 11 Warren St., New York.

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desirous of introducing their goods to the **British** and **Continental** Markets, are advised to insert advertisements in the newspaper **"IRON,"** published every Saturday, at *99 Cannon Street, London, E. C.*

SCALE: First 3 lines, 3/; every additional line, 10d. Price, 6d. per Copy, or 30/ per annum, inclusive of postage to the United States.

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We offer for sale at this time, at panic prices, the following Second-Hand Machinery.

One Lathe, 12 feet Bed, 34 inch swing, screw cutting, triple gear, compound rest with cross feed	$750 00
One Lathe, 9 feet Bed, 22 inch swing, chain feed	100 00
One Lathe, 7 feet Bed, 17 inch swing, screw cutting	150 00
One Lathe, 8 feet Bed, 22 inch swing, screw feed	250 00
One Lathe, 12 feet Bed, 22 inch swing, screw feed	300 00
One Large Upright Drilling Machine, 48 inch table	350 00
One Small Slotting Machine, utmost stroke 7½ inch	150 00
One 26 inch Gear Cutter with cutters and arbors	200 00
One 36 inch Gear Cutter	150 00
One 60 lb. Atmospheric Hammer, Hotchkiss Patent, with lot of Tools	450 00
Two Planers, 8 feet Bed, with cross and down feed, 27¾ inch between, 32½ inch above; $600 each	1200 00
One Screw Machine, 9 inch diameter, 8 cutters	50 00
One Portable Engine, 6 inch cylinder, 10 inch stroke	500 00

Will exchange a portion of the above for a Stationary Engine of about twenty or twenty-five horse power.

The Stiles & Parker Press Co.
Middletown, Conn., Jan. 9th, 1874.

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Any person wishing to engage in the foundry business may learn of an opportunity to purchase a new building just erected for said business, all complete and ready to be started without delay or additional expense; or said property would be exchanged for unencumbered productive Real Estate. For further particulars address
H. F. A., Box 488, Northampton, Mass.

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An old established business For Sale in the thriving city of South Bend, Ind. Stock will invoice about $12,000. Trade large. An investigation invited. Reason for selling, ill health. Address,
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SAFE INVESTMENT.
For Sale,
Big Muddy Coal, Timber & Farm Lands.

The whole or one interest in 746⅝ Acres of the Big Muddy Smelting Coal Lands, in Jackson County, Illinois. Vein 3 and 6 feet in 80 feet from surface; five improved Farms, with 246 acres under fence; Timber, such as White and Burr Oak, Walnut, Poplar, Ash; being 500 acres. The Timber alone will pay for the land. The St. Louis and Cairo Railroad runs through said lands, two miles from Murphysboro, the county seat of Jackson County, Ill. Will sell the whole for $75 per acre, and take half or one-third interest. Address
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Owners of three Mines in St. Clair Co., Illinois,
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The old "Green River Works" of J. Russell & Co., near the depot at Greenfield, Mass.

The cutlery business having been removed to Turners Falls, the Works near Greenfield depot, with all appurtenances, and about 100 horse power, **will be sold low and on very favorable terms.** The Works, which are on both sides of Green River, consist of Stone, Brick and Wood Factory Buildings, and were used for many years in the manufacture of cutlery; but they are well adapted to any manufacturing business. The property is so situated that it can be divided, if desired, into two almost equal portions.

In view of the nearness of the property to the new Hoosac Tunnel Railroad Line and the beautiful town of Greenfield, it must greatly increase in value.

Here is a rare chance. Who will secure it?
Address or call on *D. C. G. FIELD,*
Treasurer John Russell Cutlery Co.,
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For Sale.

We have now on hand and will sell at very moderate rates, the following lot of second-hand machinery, viz.:

Five Double Hoisting Engines, suitable for mining, tunneling or other purposes. Each of these engines has two cylinders, 7½ in. diam. by 18 in. stroke; two drums, 4 ft. diam. by 4 ft. long; geared to engine in proportion of 8 to 1, and are provided with disconnecting gear and friction brakes.

One 8 Horse-Power Portable Lane & Bodley Engine. Cylinder, 6 in. by 12 in., nearly new.

One 25 Horse-Power Portable Engine, in first rate condition. Cylinder, 10 in. diam. by 24 in. stroke.

One 30 Horse-Power Portable Engine, with Circular Saw Mill and Saw complete.

One 12 Horse-Power Stationary Engine. Cylinder, 8 in. by 12 in.

Five 4 Horse-Power Stationary Engines. Cylinder, 4 in. by 10 in.

One 30 Horse-Power Locomotive Boiler, in first-rate condition, nearly new.

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Two Flue Boilers, 26 ft. long, 42 in. diam., each with two 14 in. flues, in good order.

Four No. 6 Sturtevant Blowers.

One No. 2 Sturtevant blower.

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One No. 6 Andrew's Centrifugal Pump.

One No. 6 Turbinate Centrifugal Pump.

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Three Woodward Pumps.

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Valuable Iron Works, For Sale.

The undersigned offers for sale the Iron Works in Pottsville, Schuylkill County, Pa., known as "The Washington Works," consisting of a

Large Stone Machine Shop & Foundry,

Brick Pattern House, Erecting Shop, Stone Blacksmith Shop, Brick Office, and Lot of Ground containing in front 195 feet 3 inches, and in depth 260 feet.

There will be sold with the above a large and valuable collection of Patterns, Heavy Crane Flasks and Heavy Core Spindles for making heavy Castings and Pipes of all sizes; Turning and Planing Tools.

The Works can be put in immediate operation. A favorable opportunity is here presented for enterprising men. The demand for Castings and Machinery is constantly increasing in this region. The property will be sold on liberal terms. *If not sold in a reasonable time it will be for Rent.*

For particulars apply to
J. W. ROSEBERRY, Trustee,
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FOR SALE.
Hardware, Stoves & Tinware & Business House,

Doing a **Cash Business** of **$20,000 per annum** at **25 per cent. profit,** in **Central, Ills.** For information address **"W."**
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The Iron Age uses four Cuts

Trade Report.

Office of THE IRON AGE,
WEDNESDAY EVENING, Feb. 4, 1874.

The past week has been a dull and uneventful one in Wall street, owing in great degree to the failure of Congress to reach any decision on the financial questions before it. Commercially the situation is favorable and the outlook promising. The opinion prevails that the spring trade, will be unusually active and fully as profitable as usual, notwithstanding the fact that there has been some shrinkage in values, especially on stocks of goods carried over from last year. It is admitted that the country markets was never so bare of stocks at this season of the year as they now are, and a general replenishing is consequently necessary. The West has gained currency through the hog crop, now marketing, and the South and Southwest are certainly in as favorable a position as usual to enter the market as buyers. Money is not only reported plenty throughout the country, but there is a plethora of it at the inland centers of trade, and the supply is steadily accumulating. There is, therefore, reason to believe that the stagnation which has existed ever since the panic will soon give place to a general and healthy commercial and industrial activity. The danger that Congress will commit itself to some foolish and impossible financial policy is the cause of whatever anxiety and apprehension is now felt in business circles. Whether it will do so or not is a subject on which we should not now care to risk an opinion.

During the past week the money market has been very easy, with 4 @ 5 per cent. as the ruling rate on call loans, and 6 @ 8 per cent. as the selling price of prime commercial paper.

The gold market has been inactive, and the premium has ranged within narrow limits, as will be seen from the following comparison of extreme daily fluctuations:

	Highest.	Lowest.
Thursday	111⅛	111⅛
Friday	111⅛	111⅛
Saturday	111⅛	111⅛
Monday	111⅛	111⅛
Tuesday	111⅛	111⅛
Wednesday	111⅛	111⅛

Government bonds have continued strong—also Southern State bonds and desirable railway mortgages. We give below the closing quotations of governments.

In the stock market there has been little doing. In speculative shares the greatest activity has been noticeable in Western Union, Lake Shore, Union Pacific, St. Paul, Pacific Mail, Ohios and New York Central. The highest and lowest of to-day's quotations on 'Change are given below.

The movements in foreign trade for the week are as follows:

IMPORTS.

	1872.	1873.	1874.
Total for week	$9,596,123	$9,661,598	$5,893,972
Prev. reported	22,338,394	26,736,669	19,761,625
Since Jan. 1	$31,934,517	$36,398,267	$25,645,597

Included in the imports of general merchandise for the week are:

	Quant.	Value.
Anvils	40	$350
Brass goods	25	3,070
Bronzes	14	1,077
Chains and anchors	194	8,238
Copper		282
Cutlery	102	35,933
Guns	39	5,707
Hardware	62	6,641
Iron pig, tons	1,359	39,360
Iron sheet, tons	4	592
R. R. bars	4,938	93,136
Iron, other, tons	31	1,259
Lead, pigs	3,587	23,243
Metal goods	148	15,210
Nails	1	160
Needles	11	2,981
Old metal		310
Platina	1	3,368
Per. caps	5	603
Saddlery	2	263
Steel	2,829	16,900
Silver ware	4	262
Tin, boxes	32,616	178,570
Tin, 1,038 slabs	42,482	9,905
Wire	31	2,805

EXPORTS, EXCLUSIVE OF SPECIE.

	1872.	1873.	1874.
For the week	$4,500,068	$5,611,700	$5,672,206
Prev. reported	14,565,349	17,411,481	20,781,489
Since Jan 1	$19,065,417	$23,023,181	$26,453,695

EXPORTS OF SPECIE.

Total for the week	$297,491
Previously reported	2,050,052
Total since January 1, 1874	$2,347,543

The bank statement shows that the banks hold now $27,215,150 lawful money above 25 per cent. of their total liabilities, which is $478,125 less than so held last week. The loans have been increased $2,384,700, but the banks are yet moving cautiously, and do not seem disposed to expand on the issue already made by the Treasury of legal tenders out of the so-called reserve. So that should there be a withdrawal of these notes, the banks would be comparatively little affected. The following is a comparison of the bank figures for the past two weeks:

	Jan. 24.	Jan. 31.	Differences.
Loans	$267,611,100	$269,995,800	Inc. $2,384,700
Specie	34,739,100	33,342,100	Dec. 1,347,600
Leg. Ten.	57,883,300	58,877,700	Inc. 994,400
Deposits	232,691,800	233,119,800	Inc. 428,000
Circ'lation.	27,024,700	26,898,800	Dec. 125,900

Government bonds closed as follows:

	Bid.	Asked
U. S. Currency 6s	115½	115¾
U. S. 6s 1881, reg	117¾	118
U. S. 1881, cou	118½	118⅝
U. S. 1865 5-20 reg., May and Nov	116½	116¾
U. S. 5-20 1862, cou	115⅝	115¾
U. S. 5-20 1864, cou	116¾	117
U. S. 5-20 1865, cou	118	118¼
U. S. 5-20 1867, reg., Jan. and July	117⅛	117¾
U. S. 5-20 1865, cou	116⅞	117
U. S. 5-20 1868, cou	118	118⅛
U. S. 5-20 1868, cou	117¾	118
U. S. 10-40 reg	110⅜	110⅞
U. S. 10-40 cou	114⅛	114⅝
U. S. 5s 1881 reg	111⅜	112
U. S. 5s, 1881 cou	111¾	111⅞

The following were the highest and lowest prices of stocks to-day:

	Highest.	Lowest.
N. Y. Cen. & Hudson Consolidated	104¾	103½
Lake Shore	82⅜	81¾
Rock Island	107	105¾
New Jersey Central	104¾	104
Del. Lack. and Western	108	107¾
Wabash	53¼	52⅞
Harlem	125	125
Canton Land Co	78⅛	78
Western Union Telegraph	76½	76
Northwestern	59⅛	59
Milwaukee & St. Paul	47⅛	46¾
Milwaukee & St. Paul pref.	71⅛	71⅛
Panama	116	115
Pacific Mail	43	42⅜
Erie	49⅛	48⅜
Ohio & Mississippi	34⅛	34⅛
Union Pacific	35½	34⅜
C. C. & Ind. Central	31⅜	31⅛
Atlantic & Pacific Preferred	19	18⅜
Hannibal and St. Joseph	31⅛	31⅛
Quicksilver	34⅛	30⅛
" Preferred	38⅛	36

GENERAL HARDWARE.

The New York Hardware market has assumed an appearance of decided activity. A number of large buyers are in town, and are ordering very satisfactory bills. The orders received show that buyers are ordering full lines, and not merely such goods as they need for immediate wants. One large manufacturing house informed us that they had received orders to-day for more goods than they could make in two weeks. The agent of another well-known company states that he has information from the factory that a few more orders for immediate shipment will break their stock. We merely note these instances as indications of the general state of things. Everything seems to point to a good spring trade.

Burden's Horse Shoes were reduced on the 1st instant to 5 cents per lb. at Troy, and Mule Shoes, 6 cents. The prices here are as follows:

Burden's Horse Shoes	₰ keg,	$5·12½
Burden's Mule Shoes	" "	6·12½
R. I. Horse Shoe Co., Perkins Pattern	" "	5·12½
R. I. Horse Shoe Co., R. I.	" "	5·02½

Trade in foreign Hardware, although not as active as domestic, shows signs of improvement, and prices continue firm and unchanged. The demand for Nails continues good for this season, and prices remain as quoted for some time past. We are informed that although no advance has taken place, holders are strong in their views, and the minimum price could not be shaded under the most favorable circumstances. The National Association of Nail Manufacturers hold their semi-annual meeting in Philadelphia this evening, and it is probable that some action will be taken on the local differences at present existing in the card rate. We continue to quote 10d. in small lots $4 @ $4·15, net. Lots of 50 to 500 kegs and upward, $4, net.

There is an active demand for Wire, and manufacturers are firm in their views at our quotations. Large orders for future delivery have been declined at better figures than the regular jobbing rates.

The manufacturers of Stair Rods held a meeting on the 2d instant, and confirmed the existing list and discount. On the 12th ultimo the list of ¾ inch half-round Iron-Lined Rods was advanced. The following is the revised list:

Length	27	30	36	40 inches.
Price	$5·50	6·00	7·25	8·00

Patent Ends, $1 per dozen extra.

Landers, Frary & Clark have issued, under date of 15th ultimo, the following discount sheet and price list of new goods. Among their new goods we notice Reed's Patent Butter Knife Rest, a neat silver-plated contrivance, which can be applied to any size or style of butter dish. It combines a rest for the knife, with a very ornamental holder for passing the dish. Price $5 per dozen, discount 20 per cent. They also illustrate the Handy Glue Pot. Price $5 per dozen, discount 25 per cent., and in case lots of six dozen, discount 30 per cent.

NEW AND IMPROVED PATTERNS AMERICAN SCISSORS AND SHEARS.

No. 0, Scissors	per gross,	$10·00
No. 1, "	"	12·00
No. 2, Shears	"	16·00
No. 3, "	"	24·00
No. 4, "	"	32·00

Discount 30 per cent.

DRAWER PULLS.

No. 200, Imperial Bronze, 3¼ inch				per gross,	$9·00
No. 201,	"	"	3½	"	11·25
No. 202,	"	"	4¼	"	13·50
No. 203,	"	"	5¼	"	16·00
No. 210,	"	"	3	"	11·00
No. 211,	"	"	3½	"	12·00
No. 212,	"	"	4	"	13·00
No. 220,	"	"	3	"	12·00
No. 221,	"	"	3½	"	13·00
No. 222,	"	"	4	"	14·00

Discount 50 per cent.

DROP DRAWER HANDLES.

No. 1000, Imperial Bronze	per gross,	$34·00
No. 1001, " "	"	35·00
No. 1002, " "	"	36·00

Discount 50 per cent.

TWINE BOXES—NEW DESIGNS.

No. 45, Imperial Bronze, (for Druggists' use,) to hang	$4·00
No. 55, Imperial Bronze, large, to hang	4·50
No. 65, Imperial Bronze, (for Druggists' use,) to stand	6·00
No. 75, Imperial Bronze, large, to stand	6·50

Discount, 30&10 per cent.

DISCOUNTS.	Discount per cent.
Brass Racking Cocks	25&10
Brass Wine Cocks	10
Brass Bottling Cocks	10
Brass Globe Cocks	25&10
Brass Cocks	25&10
Brass Bibb Cocks	25&10
Brass Mis. Gauge Cocks	25
Brass Lager Beer and Ale Cocks	25
Brass Beer Vents	10
Brass Water Cooler Cocks	10
Brass Urn Cocks	20
Frary's Patent Petroleum Oil Faucets	10&10
Cork Lined Faucets	55&10
Fenn's Cork Stops	40
Fenn's Faucets	50
Fenn's Loose Key Faucets	50
Fenn's Urn Pattern Albata Faucets	30&10
Stebbins' Pattern Molasses and Oil Gates	70
Lincoln's Molasses and Oil Gates	50&10
Patent Improved Measuring Faucets	20
Enterprise Bung Borer	20
Seaver's Water Gates	30
Spring Balances	15
Turnbull's Market Scales	15
Standard Family Scale	15
Turnbull's Family Scale	15
Turnbull's Counter Scale	15
Tea and Hatch Scales	10&10
Union Scales	10
Excelsior Steelyards	10
Patent Scale Beams	30
Bright Iron and Brass Screw Eyes	70
Bright Iron and Brass Screw Hooks	70
Bright Iron and Brass Gate Hooks and Eyes	70
Brass Hooks and Eyes	50
Malleable Hooks and Eyes	40&10
Bright Cornice Hooks and Eyes	70
Cottage Bird Cage Hooks	15
Bright Wire Screw Meat Hooks	70
Wrought Meat Hooks	20&10
Bright Wire Goods	50&10
Pointed Belt Hooks	45&10
Drawer Pulls	50
Casters—all kinds	30
Iron Axle Pulleys	10
Wood Wheel Pulleys	20&10
Universal Bedstead Fastening	Net.
O. K. Tack Hammers	10&10
Magnetic Tack Hammers	10&10
Webb's Patent Twine Boxes	30&10
Cone's Patent House Bells	25
Webb's Farmer's Wrench	25
Blake's Pattern Nut Crackers	40&5
Mouse Traps	50
Pan and Cover Lifter	20&10
Coffee-Pot Stands	40&5
Sad Iron Stands	33⅓
Frary's Metallic Mane Combs	33⅓
Flush Show-Case Catches	Add 20
Frary's Toy Air Pistols	20

Roger's Silver Plated Goods, Revised Price List, adopted September 16th, 1873, on orders under $200 Net. 30

On orders of and over $200 Net	30&5
Or an add'tional discount of 5 per cent. for payment within 30 days.	
On Nickel Silver Goods (Tinned) with an additional 5 per cent. for payment within 30 days.	15
Call Bells of all descriptions	35
Spring Tape Measures	25
Patent Sewing Birds	25
Ivy or Flower Stands	25
Enterprise Mfg. Co's Goods	20

George W. Bruce, No. 1 Platt street, offers Wood's Cast Steel Planters' Hoes at the following prices, prompt cash:

Nos.	00	0	1	2	3	4
Sizes	6¼	7	7⅛	8	8¼	9 in.
Half Bright	$3·65	3·85	4·00	4·35	4·85	
Polished	3·95	4·15	4·30	4·75	5·15	5·85

There is a slight improvement in the condition of the market for French Window Glass, and holders, as a rule, are not over anxious to book large orders at the minimum rates which have ruled for some time. Prices are firm at our quotations. The monthly meeting of importers of Window Glass was held to-day, but up to time of going to press we are unable to report their proceedings.

White & Sanson, Manufacturers of Table Cutlery, Laurel street, Philadelphia, inform us that their new pattern Cocoa Handle Knives and Forks, No. 601, are $8 per gross, net, instead of $7, as published in our issue of 22nd ultimo.

We take pleasure in calling the attention of our readers to the subjoined notice from the office of Horace Durrie:

OFFICE OF HORACE DURRIE,
97 Chambers and 81 Reade streets.

COPARTNERSHIP NOTICE.

I have admitted Mr. J. C. McCarty as a partner in my business from this date.

The name of the firm hereafter will be Horace Durrie & Co. HORACE DURRIE.

New York, February 1st, 1874.

Mr. McCarty's friends in the trade, particularly in this and neighboring cities, will be pleased to hear of his advancement, and will no doubt show their appreciation by extending increased favors to the new firm.

The Bridgeport Pump Co. has removed from No. 55 to 88 Chambers street, in the store of Graham & Haines.

Hotchkiss Sons started their engine last Monday, and are now making Mouse Traps. They will soon be able to resume the manufacture of Curry Combs, which will be ready for shipment next month.

The Francis Axe Co., Buffalo, N. Y., have sent us the following price list under date of 21st ultimo.

CHOPPING AXES.

Ridge Bit, Bronzed.

Ex. Light, 3¾ to 4¾ and under	per doz., $12·00
Light, 3¾ to 4¾, 4 to 5, 4¾ to 5¾,	50c. advance over Ex. Lt.
Medium, 4¾ to 5¾, 4¾ to 6	$1·00 adv. over Ex. Lt.
Heavy, 5 to 6, 5¾ to 6¾	1·50 " "
Axes with double portion of Steel	$1·50 extra
Beveled Axes	50c. per doz. extra

DOUBLE BITTED AXES.

Light, 4 to 5 lbs	per doz.	$21·00
Medium, 4¾ to 5¾	"	22·00
Heavy, 5 to 6 lbs	"	23·00
Double Bit, Beveled	extra, "	1·00
Handled Axes	"	14·50

Our seconds are stamped "J. Russell," and sold at 75c. per doz. less than above.

HATCHETS.

Nos.	1	2	3
Cast Steel Shingling	$8·00	8·50	9·00
" Lathing	8·00	8·50	9·00
" Claw	9·00	9·50	10·00
Solid Cast Steel Lathing, Pol'd	11·00	12·00	

Discount 25 per cent.

BOYS' AXES AND HUNTERS' HATCHETS—BEVELED.

Boys' Axes	per doz.,	$13·50
Hunters' Hatchets	"	9·00

Discount 25 per cent.

ADZES.

House Carpenters'	per doz., $24·00

Discount 25 per cent.

CROW BARS.

Wedge or Pinch Point	per lb., 6¼c

WEDGES.

Wood Choppers' Fluted	per lb., 7c
Hop Bars	" 7c
Ball Drills	" 12c

PICKS.

Axe Finish, Cast Steel Points.

Railroad or Clay, 4 to 5	$9·00 net
" " 4⅛ to 5¾, 6 to 6	$9·00
" " 5¾ to 6¾, 6 to 7	9·50

MATTOCKS.

Axe Finish.

Short Cutter	per doz., $11·75 net
Long "	" 11·75 net
Pick Mattocks	" 11·75 net

GRUB HOES.

1.	Cast Steel Point, Round Eye		$13·50
2.	" " " "		14·00
3.	" " " "		14·50
1.	" " Oval Eye		14·50
2.	" " "		15·00
3.	" " "		15·50

Discount 25 per cent.

The Spring Perch Company, of Bridgeport, Conn., have handed us the following list for their goods, dated January 1st. A cash discount of 5 per cent. will be allowed from the entire list:

PRICE LIST OF SPRINGS.

Elliptic Springs 1¾ in. and larger	23c.	per lb.
" " 1⅜ in.	24c.	"
" " 1⅞ in.	25c.	"
" " 1¾ in.	26c.	"
2 Plate Elliptic Springs	$5·00 to 5·50	per pair.
3 " " " between 23 & 27 lbs.	28c.	per lb.
4 " " " 27 & 32 lbs.	28c.	"

SIDE SPRINGS.

Side Springs 1¾ in. and larger	23c.	per lb.
" " 1⅜ in.	23c.	"
" " 1⅞ in.	25c.	"
" " 1¾ in.	26c.	"

COACH SPRINGS.

French Elliptic and French Platform and Cross, 1¾ in. and larger	23c. per lb.
do. 1⅜ " "	24c. "
Scroll & Scroll Platform and Cross, 1c. per lb. extra.	

C SPRING.

C Springs, of ordinary pattern, 3 plate		$18.00	per pair.
" " "	4 "	21·00	"
" " "	5 "	25·00	"
" " "	6 "	29·00	"
" " "	7 "	33·00	"
Best Tempered Eng. Steel Spring, warranted, 1¾ in. and over		18c.	per lb
do. 1¾ "		19c.	"

PRICE LIST OF IRON AXLES WITH STEEL CONVERTED ARMS.

Long Beds, per set.

	Half Patent Axles.	Swell Taper Axles.	Mail Axles.
¾ and ⅞ inch	$9·00	$9·00	$12·00
1 inch	9·50	9·50	13·00
1⅛ inch	11·00	11·00	15·00
1¼ inch	14·00	14·00	18·00
1⅜ inch	18·00	18·00	21·00
1½ inch	21·00	21·00	23·00
1⅝ inch	26·00	26·00	28·00

Short Beds, per set.

¾ and ⅞ inch	6·50	6·50	9·00
1 inch	6·75	6·75	9·50
1⅛ inch	7·75	7·75	11·00
1¼ inch	7·75	9·75	13·00
1⅜ inch	13·00	13·00	16·00
1½ inch	17·00	17·00	18·00
1⅝ inch	19·00	19·00	22·00

Mail Axles with Brass Nuts, $4·00 extra per set.

PRICE LIST OF STEEL AXLES.

Long Beds, per set.

	Half Patent Axles.	Mail Axles.
¾ inch	$11·50	$15·00
⅞ inch	12·00	15·00
1 inch	13·50	17·00
1⅛ inch	16·00	19·00
1¼ inch	20·00	23·00
1⅜ inch	24·00	26·00
1½ inch	26·00	30·00

Short Beds, per set.

¾ inch	9·50	12·00
⅞ inch	9·50	12·00
1 inch	10·50	13·00
1⅛ inch	12·00	15·00
1¼ inch	15·00	17·00
1⅜ inch	19·00	21·00
1½ inch	22·00	25·00

Half Patent Axles with Patent Wrought Iron Case Hardened Boxes, extra per set: ¾ inch, $1·75; ⅞, 2·00; 1, 2·50; 1⅛, 3·00; 1¼, 3·75; 1⅜, 4·75; 1½, 6·00.

It seems that we fell into a natural error in regard to the author of the letters signed "John Wilson," which have lately appeared in these columns. The following letter will set this right:

To the Editor of The Iron Age—SIR: My letter published in your impression of Dec. 18 has been reproduced in our Sheffield *Telegraph*. I have no fault to find with your comments on my letter. Your criticisms are fair and manly. As to the relative merits of the English and American methods of manufacture, that is a question which time and experience will effectually settle. I should not have troubled you further in this matter but for an unintentional mistake into which you have fallen in reference to myself. You say, "We cheerfully give place to the following letter from Mr. Wilson, the *eminent Sheffield manufacturer*." I am not a "manufacturer," but as your "Sheffield correspondent" told your readers, "I am a person well known *hereabouts*, who has long been in the service of Joseph Rodgers & Sons." As "John Wilson's Celebrated Butcher and Shoe Knives" are advertised in your columns, you have confounded me with that firm. A reference to my letter will show that I am an *artisan*, and as such was recommended by the Mayor and Chamber of Commerce of Sheffield as a skilled workman, well qualified to report on Cutlery at the Paris and Vienna Exhibitions. For upward of 100 years the firm of John Wilson & Sons, Sycamore street, Sheffield, have possessed a reputation for the excellence of their manufactures. The name "Wilson," like that of "Rodgers," has often been stamped upon Cutlery of spurious make—a practice which, I feel persuaded, will not be approved by any upright person. In my native town I am sufficiently "celebrated," and am well known to many English workmen in America. These know that I am not "Mr. Wilson, the eminent Sheffield manufacturer." With your *business* readers the case will be different; they will suppose that I am the manufacturer of the "celebrated Butcher Knives" advertised in *The Iron Age*.

JOHN WILSON.

98 ANDOVER STREET, SHEFFIELD, Jan. 15th, 1874.

The Miller Brothers Cutlery Company send us the following:

WEST MERIDEN, CONN., Jan. 28th, 1874.

Editor of The Iron Age—DEAR SIR: We, as one of the manufacturing firms of Poeket Cutlery in this country, have been quite interested and more amused at the correspondence in your paper between Mr. John Wilson and your regular Sheffield correspondent. There are some allusions in those articles that so evidently refer to the Miller Bros. Co., that we desire, through your largely circulated paper, to touch upon those points for the benefit of your readers, who are, also, many of them, our patrons.

Mr. Wilson, undoubtedly, is not wilfully ignorant of our process of forging blades for pocket cutlery, but has probably been led astray by the agents of other manufacturers who *are* interested in making statements that are not true. *Our* agents are often much amused at the stories told by other agents in regard to our process of manufacture. One of the largest cutlery dealers in New England was recently accosted by an agent of a cutlery company, and made this remark: "What! do you use those Miller Brothers knives? Don't you know that those blades are *pressed*?" "Is that so?" inquired the apparently astonished dealer: "Then I wish to God your concern would make *pressed* blades, for they are the best knives I ever sold."

But to Mr. Wilson's statements, which run something like this, in various places throughout his letter: "Blades cut out of sheet steel;" "which is done by a fly or drop press;" and that "any practical worker in steel will tell you that a forged blade will be *better* than the 'tilted' one." "Any one who believes that 'flyed' blades are equal to forged ones is behind the age," etc. Now, Mr. Editor, Mr. Wilson knows about as much concerning our process of making a knife as does the youngest apprentice in your printing office. He should be informed that our blades are *not* cut out of sheet steel, but "forged" just as much and just as thoroughly as those made by Joseph Rodgers & Sons. *Ours* are forged by a hammer propelled by power, which makes them more uniform in texture and size than hand work. Know, also, that our blades are forged from Wardlow's best cast steel, made expressly for pocket cutlery, in BARS, and imported directly by ourselves. They are in no sense "pressed" or "flyed," but are forged just as thoroughly as any blade made in the world can be. We are not saying one word against the cutlery made by Joseph Rodgers & Sons. It is excellent in quality; has been a long time before the public, and has achieved a reputation that is world wide. It will take a long time for younger manufacturers to achieve this reputation, however superior in quality their goods may be. For the benefit of Mr. Wilson we will make this statement. Our goods are all warranted in every particular, and of knives returned, from all causes, we have less than *one-tenth part of one per cent.* Our business has increased more than six-fold within the past two years, and we have made no cessation of labor throughout the panic. Among our customers all over the country, from California to Maine, and in the British Provinces, we have only heard this remark: "Your cutlery gives the best of satisfaction." The stockholders have this day voted to increase the capital stock, and we think the time is not far distant when our goods will be recognized as fully equal, if not superior, to any manufactured in Sheffield. We firmly believe that we have the mechanical skill to do this, and if Mr. Wilson or any of his Sheffield associates will call upon us, they will undoubtedly be satisfied of the truth of this statement.

Truly, yours,
MILLER BROS. CUTLERY CO.

IRON.

American Pig.—The Iron market in all departments is very dull. In Pig Iron, makers refuse to make contracts, and remain firm in their prices. For prompt delivery they quote $35 for No. 1, $33 for No. 2 Foundry, and $31 for Gray Forge, at Hoboken. Sales have been made of all grades at these prices. Buyers would make large purchases if they could shade these prices. As it is, sales have not been large, as both parties prefer to hold off and see what turn affairs may take. We quote: Foundry No. 1, $35 @ $36; Foundry No. 2, $33 @ $34; Gray Forge, $31.

The following extract from a letter, dated St. Louis, Feb. 2, will be of interest: "Only two furnaces, producing about 75 tons, are in blast here, out of nine finished furnaces, with a capacity of 420 tons daily. Cause, high prices for ores, Iron Mountain being $8; South West ores, $6·50 @ $7·50, according to quality; Pilot Knob, $6. Low prices for pig iron and high prices for raw material have produced their natural results, viz: stoppage of production."

Scotch Pig.—There is little change to report in the state of the market. Business is not large, but the houses we have seen report that January was a better month this year than last. We quote Eglinton $41 @ $41·50; Glengarnock, $42·50; Coltness, $45.

Following are the prices of Scotch Pig Iron in Glasgow, as reported by Messrs. J. E. SWAN & BROS., under date of Jan. 16:

	No. 1	No. 3	No. 4
Gartsherrie	115/	107/	....
Coltness	117/6	108/	....
Summerlee	112/6	107/	110/
Langloan	115/	107/6	....
Govan	108/	106/6	110/
Calder	*112/6	107/6	....
Shotts, Bessemer	150/	145/	....
do Ordinary	115/	107/6	....
Carnbroe	111/6	107/	110/
Wishaw	108/	106/6	105/
Monkland	108/	106/6	....
Chapelhall	112/6	....	....
Clyde	108/	106/6	107/6
Quarter—Clyde	108/	106/6	107/6

Glasgow Warrants 3-5, No. 1; 2-5, No. 3, g. m. b. 106/6.

*f. o. b. Glasgow, 1/ per ton, extra.

WEST COAST BRANDS—*f. o. b. Ardrossan.*

Glengarnock, Ardeer	112/	107/6	....
Eglinton, Lugar, Muirkirk, Portland	Branded Eglinton. 107/	105/	106/
Dalmellington	108/	106/	105/

CURRENT RATES OF FREIGHT ON PIG IRON.

To	From Glasgow.	From Ardrossan.
New York	7/6	7/6
Boston	17/	17/
New Orleans	20/	20/
Baltimore	17/	17/6
Philadelphia	16/	16/
Providence	20/	15/

Bar.—Makers of Bar Iron are getting firmer in their views, and are indisposed to sell at less than they could afford if they had to buy their Pig Iron at present prices. The latest quotation we have from Philadelphia is 3·3 cents. We learn of a sale of 100 tons in Pittsburgh at 3¼ cents, early delivery and prompt cash.

Rails.—There is no change to note. We quote Welsh, $60, gold, and American, $62·50 @ $65, currency.

Old Rails.—We quote Old Rails without change, $42 @ $45, although the absence of transactions makes these figures nominal. It is not likely that any stock put on the market for sale would bring these prices. At the same time some Rails are held at higher figures.

Scrap.—We quote Wrought Scrap from yard, $42·50. A sale of 350 tons to a Providence buyer has been made at a private price. It is urged that this clears the market of cheap iron, and that an advance should take place. Most of the stock here cost more than present prices.

BRITISH IRON MARKET.

(*Specially reported by cable for The Iron Age.*)

WEDNESDAY, Feb. 4, 1874.

Rails.—The market is quiet, with an improving demand. Prices are steady, and a fair amount of business has been transacted. We quote Welsh £10. 5/ @ £10. 10/.

Scotch Pig.—Business is dull and prices weak. The demand has fallen off, and few transactions have been made. The following are makers' quotations:

Glengarnock, No. 1	111/
Coltness, No. 1	114/6
Gartsherrie, No. 1	112/
Eglinton, No. 1	106/

Manufactured Iron.—The demand is not large, but steady, and a moderate business has been done. Prices are steady. Best Staffordshire Bars are quoted £14.

METALS.

Copper.—At the end of last week the market for Ingot Copper developed considerable activity, and a speculative feeling was manifested. Prices for cash lots were advanced about 1c. per lb. over the quotations in our last, and 25½c. @ 26c. were the asking rates. It was soon discovered, however, that the amount of the transactions had been very much exaggerated, and the sales, which had been reported at nearly 4,000,000 lbs., were ascertained to have reached only to about 2,500,000 lbs. The speculative demand thereupon subsided, and the market has been very quiet since, while prices have receded to those ruling last week. The closing quotations are for cash, 25c. @ 25½c., and for delivery in March and April, 26c. @ 26½c. The market for Manufactured Copper is quiet, and prices are steadily maintained at the regular list rates. Sheathing Copper (sheet 14x48 in.) over 12 oz. per square foot is quoted at 33c.; do., 12 oz. per square foot and lighter, 41c.; Braziers' Copper, ordinary sizes, over 16 oz. per square foot, 35c.; do., 16. and over 12 oz. per square foot, 38c.; do., 12 oz. per square foot and lighter, 41c.; Bolt Copper, 35c.

Tin.—The market for Pig Tin continues very quiet. Sales are reported of 150 Slabs Straits, but the price has not transpired. The closing quotations, which are partly nominal, are: Banca, 31½c.; Billiton, 27½c.; English,

L. & F., 26c.; English Refined, 27¼c.; Straits, 27⅛c. @ 27¾c., all gold. At the Dutch sale on 29th inst. we learn by cable that 20,800 Slabs were sold at 70½ florins, equal to £121 in London. There has been a fair business done in Tin Plates during the week, and prices are very firm, with an upward tendency. We note sales of 1500 boxes, Charcoal Tin, at $10·87½; 1000 do., at $11; and 1000 boxes Coke, 14x20, at $8·75, all gold.

Import of Tin into New York, from January 1 to January 31, amounted to:

	1874.	1873.
Pigs	No. 5,369	8,760
Plates	bxs. 67,689	64,316

Lead.—The market for foreign Pig is without transactions to report. The stock on hand is limited, and prices are very firm at 6⅞c. to 7c., gold. Sales of domestic for the week amount to 175 tons at 6¼c., gold. The market is very firm, and stocks are mostly held at 6¼c. @ 6½c. Manufactured is in fair demand, and prices are well maintained. The quotations are: Bar, 9¼c.; Sheet and Pipe, 10c.; and Tin Lined Pipe, 16½c., less 10 per cent. discount to the trade.

Spelter and Zinc.—The market for foreign Spelter is quiet, but prices are firm. There are no sales to report. Sales have been made of 125 tons domestic at about 8c., currency, and the demand is limited. Sheet Zinc is in fair request at our quotations.

Antimony.—There are no sales to report of Regulus. The stock continues small, and is firmly held at 13½c., gold.

IMPORTATIONS.

Of Hardware, Iron, Steel and Metals into the Port of New York, for the week ending February 3, 1874:

Hardware.

Anderson, Merchant & Co.
Files, cks., 6
Austin, Baldwin & Co.
Arms, cs., 6
Boker Hermann & Co.
Mdse. pkgs., 44
Beam & Murray,
Mdse. pkgs., 2
Barton, Alexander & Waller,
Mdse. pkgs., 1
Butler E. & Co.
Packages, 2
Dickinson Henry
Cases, 5
Drexel, Morgan & Co.
Arms, cs., 25
Friedmann & Lauterjung
Cutlery, cs., 5
Mdse. pkgs., 5
Gueutal Geo.
Mdse. pkgs., 30
Hamnacher A. & Co.
Mdse. pkgs., 26
Hilger E. & Sons,
Mdse. pkgs., 13
Hayden & Tompkins,
Mdse. pkgs., 4
Lan & Garlichs,
Mdse. pkgs., 2
Per. caps, cs., 7
Mason John W. & Co.
Wire rope, coils, 4
Moore's J. P. Sons,
Per. caps, cs., 4
Noyes, White & Co.
Per. caps, cs., 2
Outerbridge A. & E.
Crates, 1
Pratt E. C. Bros. & Co.
Cases, 3
Rosenthal J. & Co.
Cases, 1
Spies, Kissam & Co.
Casks, 2
Guns, cs., 3
Tomes, Melvain & Co.
Cases, 1
Wiebusch F.
Casks, 12
Anvils, 70
Witte John G. & Bro.
Mdse. pkgs., 7
Ward A.
Mdse. pkgs., 1

Iron.

Bean L. M.
Scrap, tons, 5; cks., 14
Congreve Chas. & Son,
Rails, 1047
Henderson Bros.
Pig, tons, 600
Jackson R. D.
Bundles, 433
Lang W. Bailey & Co.
Mdse. pkgs., 41
Bars, 2503
Montell F. J. & Son,
Scrap, tons, 3; hhds., 9; bbls., 15
Naylor & Co.
Rails, 259
Piersons & Co.
Rods, bdls., 189
Ralli Bros.
Scrap, tons, 50; bags, 53
Whitney J. F. & Co.
Scrap, hhds., 8
Order.
Pig, tons, 550
Spiegel, lots, 1
Without bills of lading.
Bundles, 584

Steel.

Drexel, Morgan & Co.
Bars, 1028
Morton, Bliss & Co.
Rails, 158
Naylor & Co
Cases, 36
Rails, 725
Order.
Old spring, tons, 100
Rails, 1974

Metals.

Bean L. M.
Scrap, copper, pkgs, 2
Bournigue & Dupouis,
Leaf tin, cs., 4
Bruce & Cook,
Tin plates, bxs., 1964
Tin, slabs, 150
Coe & Co.
Brass, bbls, 11
Dickerson J. S. & Co.
Tin plates, bxs., 2813
Goodwin, Rice & Erwin,
Tin plates, bxs., 396
Keane & Co.
Copper, hhds., 9
Montell F. J. & Son,
Lead, pigs, 11
Brass, bbls., 16
Scrap, copper, pkgs., 3
Naylor & Co.
Tin plates, bxs., 250
Phelps, Dodge & Co.
Tin plates, bxs., 12,251
Tin, slabs, 300
Antimony, cks., 25
Rivera J. de & Co.
Scrap copper, bxs, 20
Copper, plates, 14
Order.
Lead, pigs, 5006
Tin, slabs, 194
Tin and terne plates, bxs., 3788
Without bills of lading.
Tin plates, bxs., 4160
Tin, ingots, 289

COAL.

The market for Coal continues to be very dull, and there is no change in prices to report. At the monthly sale of Scranton, on the 28th ult., there was but a small number of buyers present, and a slight reduction took place in some of the sizes, and an advance of 5c. per ton on steamboat. The prices obtained were as follows:

	Jan. 28, 1874.	Dec. 31, 1873.
6,000 tons Steamb't.	$4·85 @ —	$4·80@ —
10,000 tons Grate	4·75 @ —	4·90@$4·95
5,000 tons Egg	5·17½@$5·25	5·15@ 5·30
23,000 tons Stove	5·20 @ 5·27½	5·25@ 5·37½
6,000 tons Chestnut.	4·35 @ 4·37½	4·20@ 4·37½

Usual terms.

The result of the sale does not appear to have affected the general market to any appreciable extent. The prices for Anthracite are $5 @ $6, by the cargo. It is reported that a new schedule of prices has been decided on by the combination which controls the product of the Schuylkill region, to take effect in March. There will be added 15c. per ton to the basis price of last year, making the rate at Port Carbon $2·75, instead of $2·60. There will then be a monthly advance till December as follows: Five cents per ton in April, 10 cents more in May and June, and 15 cents additional in July, August, September, October and November. This will make a total advance of $1 per ton on the prices of 1873. There is to be no further advance after the end of November. As the miners have all gone to work on the basis of 1873, the operators will profit immensely by this new scheme.

It is believed by some parties, of a hopeful temperament, that the prices to consumers will not necessarily be higher from this advance at ports of delivery, but it would hardly be advisable for any one to make his calculation on this supposition.

The market for Bituminous Coal continues very depressed, but no change to note has occurred in prices, which are quoted as follows: West Virginia, $3·50 @ $9·00; Cumberland Soft, $6·75 @ $7·25 per ton. The shipment over the Cumberland Branch Railroad for the month ending January 31st were 9077 tons, against 6516 tons for the corresponding week of 1873, an increase of 2561 tons. The quantity transported over the Cumberland and Pennsylvania Railroad for the same period was 84,399 tons, against 95,266 tons in 1873, a decrease of 10,867 tons.

Foreign Coal is without activity or change in prices. We quote Liverpool House Cannel at $20; Liverpool Gas, $11; Newcastle Gas, $9; Scotch do., $11, currency.

OLD METALS, PAPER STOCK, &c.

The market for Old Metals, Rags and Paper Stock continues to be moderately active, and the dealers report a fair amount of business doing. Below we give the purchasing prices, which show a slight advance in the rates paid for Wrought Iron, and Linen Canvas:

Old Metals.—Copper, 18c. per lb.; Yellow Metal, 13c.; Brass, 13c. @ 14c.; Composition, heavy, 15c. @ 16c.; Lead, solid, 5½c.; Tea Lead, 5c.; Zinc, 4c. @ 5c.; Pewter, No, 1, 21c.; do. No. 2, 8c. @ 12c.: Spelter, 5c. @ 5½c.; Wrought Iron, 1½c.; Sheet do., ½c.; Cast, do., ¾c. @ 1c.; Machinery, do., 1½c.

Rags, &c.—Canvas, Linen, 5c. @ 5¼c.; do. Cotton, No. 1, 5½c. @ 6c.; No. 2, 2½c.; White, No. 1, 6¼c.; No. 2, 4c.; Colored, do., 2c. @ 3c.; Mixed, Woolen, 2c. @ 3c.; Soft, do., 6c.; Gunny Bagging, 1¼c. @ 1½c.; Jute Butts, 1¾c. @ 2c.; Kentucky Bagging, 3c. @ 3½c.; Book Stock, 4c. Waste Paper and Scraps, 2c.; Kentucky Bale Rope, 4c. @ 4½c.; Oakum Junk, No. 1, 4⅛ @ 5c.; do. No. 2, 3c.; Tarred Shaking, 1c.; Grass Rope, 3½c.

PHILADELPHIA.

PHILADELPHIA, Feb. 3, 1874.

There is very little activity in the Iron trade in this city, and an entire absence of the business expected by this time in 1874, but at the same time more trade than is generally credited. Pig metal is very quiet, and we hear of no transactions as yet for future deliveries or contracts for the season, with a continued indisposition on the part of both producers and consumers to operate. One reason for this is claimed to be the fact that manufacturing establishments have not resumed on more than half time, and that consumption is consequently very much restricted. Some works, also, which had advanced their production to three-quarter time, are about to return to half time again, in absence of orders, and this has had a discouraging effect, as the establishments named are large consumers. Against this is the general belief that an active and legitimate, if not large, trade will be done, and that the requirements of the country will demand the entire possible production of 1874. Whichever may be true, it is manifest that we have not as yet the volume of business expected by February, nor is there any opinion expressed when an active trade may set in. In Manufactured Iron there is more doing, especially in new and old Rails, which are being handled to some extent. There is no particular movement in Bars, but the mills are reported fairly busy at present prices, which are considered too low entirely, in view of the price of Forge Pig at present. The condition of the entire trade affords an excellent subject for discussion, and the Convention of Iron Manufacturers, to be held in this city on the 5th inst., may result in benefit to all.

The market may be quoted as moderately active at the following prices:

PIG IRON.—No. 1 Foundry, $35 to $36, with few or no sales above $35; No. 2, $33 to $34; and Gray Forge, $30; White and Mottled, $24 to $26.

BARS—3·4c. per lb.

RAILS.—American at works, $63·50 to $65.

MUCK BAR—$45 to $46.

OLD RAILS—$39 to $42·50. Actual figures of sales.

SCRAP—$38 to $40, as to selections.

The sales include some important transactions so far as fixing prices is concerned, viz: Small sales of Foundry at quotations, in which were 100 tons Choice Schuylkill at $36; 1000 tons White and Mottled, near $24; 4200 tons New Rails at $63·50 at works; 7000 tons of Old Rails, by a Western Mill, to a New York party, on speculative account, at $39, 4 months, flat, at Chicago; 2000 tons T's., to Pennsylvania mills, at prices ranging from $40 to $42·50; 500 tons Neutral Muck Bar at quotations; and the usual 10 ton lots of Scrap at a little lower figures.

Messrs. LLOYD, SUPPLE & WALTON, under date of February 4, write us as follows: There are some signs of improvement in trade, although too early for any great amount. We usually open our trade about three weeks later than in your city. We cannot help but think the prospect fair for our spring sales. We feel more encouraged than we did four weeks ago, as mail orders indicate starved stocks and an early call for goods. The trade will open with low prices upon many kinds of goods of American manufacture. On a great many goods we fear it may not continue. Eastern, Western and Philadelphia Carriage Bolts will, undoubtedly, be held at higher rates later in the season. Neither is there any certainty of a few other goods remaining at the low rates they have been. We quote to-day as follows: Casters, 25 &10 per cent. discount. Strap and T Hinges, 30&7½ per cent. discount. 1st quality Bench Planes, 30 per cent.; 2d quality, 30&10 per cent. discount. Washoe Picks, 25 per cent. discount. Horse Shoes, $5·12½ per keg, net. Lalance & Grosjean Tinned Iron Ware, 25 per cent. discount. Lalance & Grosjean Spoons, less than a case, 10 per cent. discount. Plumbs and Levels, 60&10 per cent. discount. German Halter and Coil Chain, new gold list, 10 per cent. discount. Mashin Kettles, 25 per cent. discount. Cast Steel Augers and Auger Bits, 30&10 per cent. discount. Ames' Shovels and Spades, 12½ per cent. discount. Blind Butts (any quantity), Parker's & Shepherd's, 40&10 per cent. discount. Cherritree Blind Hinges, for Wood, 50 per cent. discount.

PITTSBURGH.

PITTSBURGH, Jan. 31, 1874.

Trade has been moderately active, and the market, while devoid of excitement, is firm, with a steady consumptive demand. Buyers and sellers, as has been the case for some time past, are still apart in their views, which, of course, curtails business and restricts operations. Sellers are still very "bullishly" inclined. As fast as they obtain one advance they at once commence working for another, consequently they don't give the market a chance to settle down. Several lots of Gray Forge Irons sold this week at $32, 4 mos. Holders have been holding at this figure for some time past, but it was only within the past few days that they were able to realize it, and it can scarcely be called the ruling rate, although there is now little or none to be obtained for any less. There is no doubt but what some of the furnace men, as soon as the market becomes fairly established at $32, will at once move their stocks up to $33, so that by the time buyers become reconciled to pay $32, and it could be sold freely at that figure, they will be unable to get it. This has been the position of the market for a couple of months past, or, ever since it commenced to react from the effects of the panic, and sellers have always been ahead of the market, and business has been restricted in consequence. It is stated that some producers will be satisfied with nothing less than $35, for standard Forge Irons, claiming that there is no margin of profit at anything less, and it is certain, if their expectations are realized, that there will have to be a sharp appreciation in the product, which, it is claimed at present rates, is lower, relatively, than the raw material. Foundry Irons are dull; there is but little inquiry and only for small lots, most of the sales ranging from 20 up to 50 tons. Prices, however, are fully sustained: No. 1, $34 to $36, 4 months; No. 2, $30 to $32. White and Mottled Irons $27 to $29. Charcoal, $37 to $40 for Hot Blast Mill; $40 to $45 for Foundry, and $60 to $63 for Cold Blast Car Wheel. There has been rather more inquiry recently for Blooms, and several small lots have been taken for trial, but as yet there has not been enough done to justify quotations. *Manufactured Iron.*—The market for Finished Irons remains substantially as noted in my last report, and presents but little that is really new or important. There was another meeting of the Association this week, and while it was claimed that an advance is warranted, taking the raw material into consideration, it was deemed impolitic to make any change in the card for the present. However, while the card has not been changed for several months, there has been a sharp advance within the past sixty days. It is said that in October and November sales were as low as 2·65 to 2 and 7 tenths, whereas to-day manufactureres very generally quote on a basis of a three cent card. Some of them are refusing to sell below this rate, and others are confidently predicting a further advance. Makers are nearly all opposed to putting prices up any higher, for the reason that it will enable other points to compete with a show of success, but unless there is a change in the position of the Pig Iron market, of which there is no such indiction at this writing, they will be forced to it, as it is claimed that, taking present rates as a basis, the margin of profit is small. The mills here, with one or two exceptions, are all in operation, some of them running double turn. *Nails.*—The Nail trade continues moderately active. Manufacturers report that orders for present delivery are coming in more freely than usual at this season of the year, while for future delivery the inquiry is increasing. They report that they could soon, if so disposed, fill their books with orders for March, April and May at present rates. There was a meeting of the Nail Association on Thursday, 29th inst., at which it was resolved to advance the card 12½ cts. per keg, making the actual selling price $3·87½, net cash; $4 for lots less than 100 kegs. Manufacturers are confidently expecting a heavy spring trade, and the general indications are that their expectations will be fully realized. *Steel.*—The market, while it cannot be termed active, is, nevertheless, improving, and prices are firm but unchanged. The mills are all running, but not to their full capacity. *Novelty Goods.*—The Jacobus & Nimick Manufacturing Company have advanced the disconnt on Locks, Knobs, Latches and Escutcheons, from 33⅓ to 50 per cent. on new list. *Window Glass.*—The situation remains substantially as last noted. Manufacturers are still very emphatic in the declaration that they will not start up until the blowers are willing to go to work at the reduction in wages, and the blowers seem just as obstinate as the manufacturers. As the factories have been idle since last July, there is, as might be expected, no stock in this market, and those who formerly drew all their supplies from Pittsburgh have been forced to send their orders elsewhere. *Coal.*—Nearly all the Coal works in the Monongahela Valley are in full blast, notwithstanding it is claimed there is no money in the business at present rates. It is only bringing 10 cents per bushel at Cincinnati, by the barge, which scarcely covers actual cost—at least it is so claimed by those who are in a position to know.

The Pittsburgh *Commercial*, of the 31st ult., says: We are unable to report any marked change in the market for Pig Iron since our last report, but can say that the price is firm, with an advancing tendency, several sales having been made at $32 per ton, four months, for Gray Forge Iron, for same brands that sold last week at $31. We therefore quote $31 to $32 per ton, four months, as the ruling rates for good Gray Forge Iron. There is some inquiry for Blooms, but no sales worthy of note, and consequently no quotable price. We are reported the following sales:

BITUMINOUS COAL SMELTED FROM LAKE SUPERIOR ORE.

900 tons Gray Forge	$31·00—4 mos.
400 tons Gray Forge	32·00—4 mos.
400 tons White to Close Gray	30·00—4 mos.
300 tons, a mixed lot	29·00—4 mos.
300 tons Gray Neutral	32·00—4 mos.
300 tons Gray Cold Short	30·00—6 mos.
100 tons Gray Forge Neutral	31·50—4 mos.
100 tons White and Mottled Neutral	29·00—4 mos.
60 tons No. 1 Foundry	36·00—4 mos.
20 tons No. 1 Foundry	33·00—4 mos.
10 tons Foundry	31·50—4 mos.

ANTHRACITE.

400 tons Gray Forge Cold Short	$30·00—4 mos.
350 tons Gray Mill Iron	30·00—4 mos.
200 tons Close Gray Neutral Forge	30·00—4 mos.
100 tons Gray Cold Short Forge	30·00—4 mos.
100 tons Close Gray Mill Neutral	30·00—4 mos.
100 tons White Iron, a mixed lot	27·50—4 mos.
30 tons No. 2 Foundry	35·00—4 mos.

CHARCOAL HANGING ROCK.

100 tons No. 1 Foundry	$40·00 to $43·00—4 mos.
78 tons No. 3 or Mill	34·00 to 35·00—4 mos.
70 tons No. 2 Foundry	38·00—4 mos.
20 tons No. 2 Foundry	$8 50—cash.

CONNELLSVILLE COKE.

450 tons Gray Forge	$30·00—4 mos.

ST. LOUIS.

Messrs. GARRETT, McDOWELL & Co., under date of 31st inst., send us the following: We note no changes in Pig Iron for the past week. Some considerable sales have been made in a regular way at previous quotations. We therefore repeat former figures as follows, which are for cash:

HOT BLAST STONE COAL

No. 1 Foundry, from Iron Mountain and Maramec Ores	$34·00 @ 35·00
No. 2 Foundry, from Iron Mountain and Maramec Ores	32·00 @ 33·00
No. 1 Forge, from Iron Mountain and Maramec Ores	29·00 @ 31·00
No. 1 Foundry, Charcoal, from Iron Mountain and Maramec Ores	36·00 @ 42·50
No. 2 Foundry, Charcoal, from Iron Mountain and Maramec Ores	32·00 @ 40·00
No. 1 Foundry, Tennessee Charcoal	35·00 @ 38·00
No. 2 " " "	33·00 @ 35·00
No. 1 Forge, " " "	31·00 @ 33·00

COLD BLAST CHARCOAL.

Car Wheel, from Hanging Rock Ores	60·00 @ 64·00
" " Tennessee Ores	58·00 @ 60·00
" " Alabama Ores	57·00 @ 59·00

CINCINNATI.

Messrs. ADDY, HULL & Co., under date of Feb. 2, write us as follows: There is no change to note from last report. Prices are still firm with a moderate demand for Foundry grades. Mill Irons are in light demand. Car Wheel grades neglected and nominal.

HOT BLAST CHARCOAL.

Hanging Rock No. 1	$38·00 @ 40·00—4 mos.
" " No. 2	35·00 @ 37·00—4 mos.
" " Forge	30·00 @ 32·00—4 mos.
Tennessee No. 1	37·00 @ 38·00—4 mos.
" Forge	30·00 @ 32·00—4 mos.
Alabama No. 1	38·00 @ 40·00—4 mos.
Missouri No. 1	38·00 @ 40·00—4 mos.
" No. 2	35·00 @ 37·00—4 mos.

HOT BLAST STONE COAL.

Missouri No. 1	$37·00 @ 38·00—4 mos.
" Forge	30·00 @ 32·00—4 mos
Ohio No. 1	35·00 @ 37·00—4 mos.
" Forge	30·00 @ 31·00—4 mos.
Scotch Pig, No. 1	

COLD BLAST CHARCOAL.

Hanging Rock Car Wheel	$60·00 @ 66·00—4 mos.
Missouri " "	58·00 @ 60·00—4 mos.
Kentucky " "	55·00 @ 60·00—4 mos.
Tennessee " "	55·00 @ 60·00—4 mos.
Georgia " "	55·00 @ 60·00—4 mos.
Alabama " "	55·00 @ 60·00—4 mos.
Machinery and Forge	55·00 @ 57·00—4 mos.
Blooms	105·00 @ 116·00—4 mos

BALTIMORE.

Messrs. WYETH & BROTHER, Iron and Steel merchants, South Charles and Lombard streets, report us the following prices under date of Feb. 3, 1874: We have to note a fair amount of trade for the past week, and particularly as regards Manufactured Irons, which are now moving at full quotation figures. Perkins Horse and Mule Shoes have declined 1¼c. per lb., and we therefore quote the same at 5½c. for the present.

AMERICAN REFINED BAR IRON.

1 to 6 wide by ⅜ to 1 thick	3¼c. to 3½c. per lb.
1 to 4½ wide by 1½ to 2 thick	3¼c. to 3½c. per lb.
Round and square, ordinary sizes, from ¾ to 2 inclusive	3½c. to 3¾c. "
Hoop Iron, 1½ wide and upward	4¾ to 5c. per lb.
Band Iron, from 1¾ to 4 in. wide	4 to 4¼c. "
Horse Shoe Iron ¼ to 1 wide by ⅜ to ⅝ thick	5 to 5½c. "
Norway Nail Rods	7⅜ to 8 c. "
Black Diamond Cast Steel, Flats, Squares and Octagon, ordinary sizes	16½c. "
Machinery Steel	11½c. "
Cast Spring Steel	11c. "
Homogeneous Steel Plate	13c. "
Perkins' Horse Shoes, per keg of 100 lbs	$5·12½
" Mule Shoes " "	6·12½

Common Horse Nails, from 14c. to 18c per pound.

	10	9	8	7	6	
Putnam Horse Nails	23	24	25	26	28c.	per lb.
	10	9	8	7	6	
Globe Horse Nails	23	24	25	26	28c.	per lb

R. R. Spikes, 5⅛ by 9-16 at 3¼c. to 4c. per lb.

LOUISVILLE.

Mr. GEO. H. HULL, under date of Feb. 2, writes us as follows: The market is firmer for nearly all grades of Pig, though sales are confined principally to cash transactions, on which a considerable concession is made on time figures. The usual time, four months, is allowed on quotations below:

HOT BLAST CHARCOAL.

No. 1 F'dry, from Hanging Rock Ores	$40·00 @ 41·00
" 2 " " " "	35·00 @ 37·00
" 1 Forge, " " "	30·00 @ 31·00
" 1 F'dry, from Tennessee Ores	34·00 @ 40·00
" 2 " " "	36·00 @ 37·00
" 1 Forge, " "	30·00 @ 31·00
" 1 F'dry, from Alabama Ores	37·00 @ 40·00
" 1 " " Iron Mountain Ores	40·00 @ 41·00

HOT BLAST STONE COAL.

No. 1 F'dry, from Missouri Ores	34·00 @ 36·00
" 2 " " " "	32·00 @ 34·00
" 1 Forge, " " "	29·00 @ 30·00

COLD BLAST CHARCOAL.

Car Wheel from Hanging Rock Ores	60·00 @ 65·00
" " Tennessee Ores	56·00 @ 58·00
" " Alabama Ores	58·00 @ 60·00
" " Georgia Ores	58·00 @ 60·00
" " Missouri Ores	55·00 @ 60·00
" " Kentucky	55·00 @ 60·00

Ramsbottom's Reversing System for Rolling Mills.

The Ramsbottom system for reversing and stopping rolls, first successfully applied at the Crewe Steel Works, has been introduced in the new plate mill of the Clydesdale Iron Works, near Glasgow. The mill comprises two pairs of rolls—roughing and finishing—7 ft. long by 25 in. in diameter; and the engines embrace a pair of 34 in. cylinders with 4 ft. stroke, and are of upward of 400 horse-power. They are provided with the well known gridiron slide valves, worked by Allan's patent link motion, and are reversed by a small engine having a cylinder of 8 in. diameter. The wheel gear is arranged for speed in the ratio of about 3 to 1. The engines can be made to run 80 revolutions per minute, and they are so completely under control that they can be made to perform one revolution in that space of time, while there is no difficulty in reversing the engines as often as fifty times per minute. The bed plate on which the engines are fitted is about 18 inches deep, and is a ponderous mass weighing nearly 30 tons. It is of the box girder form, and rests on a very secure foundation of brick and Portland cement, with iron bracing. One of the special features of the Ramsbottom system of reversing is that the reversal of the motion of the rollers is effected by reversing the pair of engines by which the rollers are driven. In it there is embodied the principle which was introduced to the notice of engineers many years ago by Mr. Nasmyth, in the construction of his well known steam hammer, namely, that of applying steam power direct to the work to be performed. When Mr. Ramsbottom applied it to his rolling mill at Crewe, he showed that it was quite possible, by means of well designed mechanism, to stop and reverse the rollers, and adjust them to different thicknesses with the utmost of readiness and precision. He not only dispensed with massive machinery, but he also did away with the cumbrous and heavy fly-wheel, which frequently weighed from 40 to 50 tons or more, and which was required for obtaining the momentum necessary to go through the work by sheer accumulation of force; and he was able to effect one very practical result by applying the power of the steam direct to the work in the exact proportion of the work itself, the result being a great saving in the expense of foundations; in fact, expensive foundations were not required, owing to the great moving masses of machinery being dispensed with. The Ramsbottom engines erected at the Clydesdale Iron Works are direct acting, horizontal engines, and they are reversed without shunting off the steam. They are of such power that there is no necessity to do anything more than just start them before the "heat" enters the rolls; and as the massive and heavy fly-wheel is entirely dispensed with, the engines are easily reversed, no more difficulty being experienced in the operation than is encountered in the ordinary reversing of a locomotive engine. For the same reason the wear and tear to which ordinary rolling mill machinery is subjected in practice is reduced to a minimum, and so likewise is the amount of lubrication that is necessary; indeed, a pint of machinery oil contains quite enough of lubricating power for a pair of engines of fully 400 horse-power during a complete shift. Instead of the heavy fly-wheel employed in the ordinary arrangement of rolling mills as a reservoir of power, in which the power of the engine is previously accumulated, ready to be concentrated upon the work at the time of rolling, the boiler is made to serve as the reservoir of power in the Ramsbottom reversing mill; and it has this great advantage, that whereas the fly-wheel contains only a limited store of power, which continues diminishing during the time of application, the boiler supply is practically unlimited, and thus the rolling power continues constant throughout the whole time of operation. For checking and reversing the motion of the rolling, the action of the elastic power of the steam is alone required; and as the power is brought to bear upon the work just as it is wanted, and direct from the engine, no accumulated force requires to be checked in the reversing operation, nor is any more force called into play than is actually required for accomplishing the rolling operation. The practice of the last few weeks with the new mill and engines, at the Clydesdale Iron Works, has shown that 25 tons of finished plates, 74½ in. in breadth and 11-16 in. thick, may be rolled with ease in a shift of 12 hours.

Gelatine molds for galvano plastics have recently been improved by a French chemist, who glues to a glass plate with copal varnish the gelatine molds, then treats them with solution of tannin to diminish the solvent action of water, and plunges them in the silver bath exposed to the sun; a bit of copper bent to a right angle is made to touch the mold, whereby silver is thrown down in flakes on the copper, and as a brilliant metallic mirror over the surface of the mold, the mold is then withdrawn and dried by exposure to the sun. The coating of silver thus formed is an admirable conductor, and thus good copies can be obtained even with weak currents.

The hardware makers of Great Britain have heavy orders from the government to manufacture hoes, to be used in giving employment to the famine stricken Bengalese. The London *News* says: "So enormous is the demand at one establishment that twenty orders alone embrace 4358 dozens, or 52,296 separate implements. One order relates to 1127 dozens, or 13,524 hoes. It is desired that all the implements may be ready this month."

Furnace No. 7 of the Thomas Iron Company at Lock Ridge has been blown out for repairs. It has long needed the contemplated repairs, but it is said the company kept it in blast out of regard for its employees.

The Crane Iron Company annually receive ten to twelve thousand tons of ore from the mines along Pequest Creek, N. J.

FOREIGN.

GREAT BRITAIN.

Messrs. J. Berger Spence & Co., London, Glasgow and Manchester, under date of Jan. 17, 1874, report:

Metals.—There has not been quite so much doing in Metals during the week, and this quiet feeling is more observable by comparison with the animation which characterized the opening week of the new year. Scotch Pig Iron Warrants were lower on publication of the weekly shipments, but the reduction in the bank rate has more than counterbalanced this temporary depression. The shipments for the week are 6400 tons, against 11,000 tons in the corresponding period of 1873. Middlesborough smelters are very firm at their quotations, which buyers at present evince some little reluctance to give. For Manufactured Iron the orders given out are moderate in number, and the makers of first-class brands are obtaining the major proportion of them. Many of the works are now working only short time, and some are closed altogether. A fair trade is being done in Copper, and prices are firm. The cable advices recently to hand from the West Coast report the charters for the first fortnight of December last as amounting to 2100 tons, and the stock on the coast a 5900 tons. Tin is steady, with an average amoun doing. There is not quite so much passing in Lead but full rates are demanded by smelters. Spelter is very quiet, and despite the present comparatively small stock lower prices have been submitted to in order to make sales. Quicksilver is reduced in value, and may now be quoted as worth £19. 2/6 to £19. 5/ per bottle.

IRON—"Ayresome" Yorkshire Pig Iron, No. 1, 95/; No. 2, 90/; No. 3, 87/6; No. 4 (Foundry), 85/; No. 4 (Forge), 85/ net cash, or 2/ extra 4 months' bills. Scotch Pig warrants, 106/ to 107/. Staffordshire Bars, £12 to £14. Hoop Iron, £13. 10/ to £14. Gas Tubes, 55 per cent. off new list. Boiler Tubes, 32½ per cent. discount.

COPPER.—English Tough Ingot, nominal, £92 to £94. Chili Bars, £82. 10/ to £83.

TIN—English Ingot, nominal, £122 to £123. Straits £120 to £121.

TIN PLATES.—Best Coke, I. C., 30/ to 34/; Charcoal, I. C., 34/ to 38/ per box.

LEAD.—Best English Soft Pig, £24 to £24. 10/. Refined Red Lead, £26 to £27.

ANTIMONY.—French Star, £56 to £57.

SPELTER.—Silesian, Special Brands, £26 to £27 English, Best Brands, £27 to £28.

FRANCE.

(Moniteur des Interets Materiels.)

PARIS, January 18, 1874.—*Metals.*—The European Metal markets have undergone but few changes during the week under review. *Copper.*—The London market has been firm and unaltered. While Ingots have been steady at Paris, Corocoro Ore has declined 2½ francs. Havre has given some proof of a revival, through the sale of 2824 bags Corocoro Ore at 225 francs the 100 kilos. Marseilles is quiet at 250 francs for Chili Refined Ingots. Germany is gradually getting firmer; thus far the dealings have not been large, although more is passing into consumers' hands, and speculators are flocking back to the markets. We hear by cable from Valparaiso that the year's export has been 936,917 quintals (100 pounds each), against 1,044,550 in 1872. *Tin.*—Early in the week London has been tending upward, and has continued steady since. This has been mainly due to the reduced quantity to be offered at the Dutch sale of the 29th instant. The Cornwall smelting establishments have, during 1873, received from the Tin mines of the county 14,844 tons of Ore, against 14,928 in 1872. After a momentary weakness, Tin is tending upward once more at Paris, and Banca, deliverable at Havre, now commands 325 francs. The smallness of the quantity to be offered in Holland has produced quite a rise at Marseilles, and Straits Tin there brings 330 to-day. In Holland, a 30,000 slab sale had been counted upon, and the short speculators have thus been forced into the market, driving Banca to 74½, to recede to 73½, subsequently. Berlin is steady at 38⅛ to 39 thalers, and Stettin at 42. *Lead* maintains its steadiness pretty much everywhere, with the exception of our own market, which declined 50 centimes; French, here, to 59½. Marseilles with little doing, but prices held for an advance. Hardly any fluctuations in Germany. Berlin at 8 to 8⅛ thalers. *Spelter.*—There has been a goodly amount of activity at London, and the metal seems at length to awaken from its torpor, closing there at £26. 10/. Paris is not only sustained, but shows greater firmness in Silesian. Marseilles is improving, and Germany firm, without amelioration. Berlin quotes W. H. 9¾ and Silesian from 8¾ to 9. *Iron.*—Despite the low ruling, business remains paralyzed. In the Champagne country there is little doing in Pig Iron; Wrought Iron and Sheet also quiet. At the South there is greater activity, but it is a hand to mouth business, "futures" being shunned as yet. Great irregularity in Pig Iron values is still prevalent in France; hence reliable quotations are impossible. Coal, both at the North and in the Pas-de-Calais, moves off with difficulty at the mines; great preparations are nevertheless being made in those localities for an increase of production during the current year. Old mines are to have additional shafts sunk, and new ones are to be opened. The two districts combined, it is estimated, will turn out an excess of 1,500,000 tons over and above their 1873 yield. Nor is this to be wondered at, when we come to consider that improved machinery will be set on foot, and that lines of railways will be opened and facilitate transportation. Two thousand new dwellings will be erected to accommodate an influx of mining population. The example of the Ruhr country and of Belgium is to be followed, where such extraordinary results have been attained by identical means.

GERMANY.

(Frankfort Zeitung.)

ESSEN (Prussia), Jan. 14, 1874.—*Coal* for industrial purposes has declined so considerably in Belgium of late that we cannot any more compete with our Westphalian Coal against Belgian in that country. Our mines, nevertheless, endeavor to uphold prices, but stocks are accumulating, there being a diminished local demand also. Hence, contracters for the current year try to get out of an unpromising bargain in some shape or another, and great weakness is observable in consequence. Some shipments are, nevertheless, going on, made by companies that were fortunate enough to contract at previous high rates with foreign railroads and gas works. We shall soon, however, be able to undersell the Belgians in their own markets by virtue of greater cheapness of production. Within a year or two our mines will, beside, be able to turn out twice the quantity, or even three times as much, as they are able to furnish at present. We shall soon be able to prove by statistics this assertion of ours.

(Borsenhalle.)

HAMBURG, Jan. 16, 1874.—There is but a limited business transacting in our metal market at the following rates: German *Lead*—25⅛ to 26 marks; English, 26·80 to 27·80. Northern *Copper*—94 to 104; American, Minnesota, 125. Banca *Tin*—1·30 to 1·35; English, 1·28 to 1·30; Rods, 1·30. *Spelter*—26 to 26·20 marks.

BELGIUM.

(Le Commerce.)

BRUSSELS, January 18, 1874.—*Iron.*—Not much of an improvement can as yet be reported in Belgian Iron industry. Owners of furnaces continue their system of trying to attract some business by making liberal concessions, and thus to keep their operatives busy; yet purchasers show no anxiety to relieve them of accumulating stocks. It should be mentioned, however, that from abroad some orders have dropped in, moderate in extent, it is true, and consequently not calculated to improve prices, or even to stay a declining tendency. Thus Pig Iron is allowed to go at 23 francs, and even as low as 22, when and wherever large lots are bargained for. Rails form an exception, and are well sustained by a steady inquiry. The general decline of Belgian Iron industry is best evidenced by the custom house returns. Thus, while we have been importing of Pig Iron but 82,677 tons during the first ten months of 1871, and 115,090 tons during the corresponding period of 1872, our import during the collateral months of last year has amounted to 133,456, while our export of the same article has decreased 51,800. Our export of Rails during the same lapse of time has from 69,122 tons in 1872 declined to 57,416 in 1873; Sheet iron from 29,048 tons to 16,179; Wrought Iron from 80,318 to 68,776; Nails from 11,793 tons have diminished to 7653. Nor can we expect much improvement in our relations with neighboring countries. Thus the situation in France is not much better, while no good can come for us from either England or Germany, our competitors. In England they seem to be resigned to a continued considerable decline in exports of Rails to the United States, where activity in the building of railroads is likely to remain checked for some time to come. Fortunately the construction of railways in South America has begun to make most extraordinary strides, whence large orders are expected during the current year. Aside from this demand for Rails for Spanish America and the Brazils, both Austria and Russia stand in need of railway equipment, the latter country in pa ticular, the refitting and extension of lines projected being on an unusually liberal scale. *Coal.*—The downward movement in Coal remains unchecked; no large transactions take place in Belgium, and, as long as this is the case, the companies will look in vain for an amelioration in values. Even the elements seem to conspire against Coal, the weather continuing mild, added to which we have the lack of activity in our Iron trades above alluded to. Not much will, however, be required to send Coal prices up again, consumers being lightly stocked. Yet we have imported during the first ten months considerably in excess of the corresponding period of 1872, say, 532,165 tons, against 160,189 in 1872, and 165,823 in 1871, and exported a great deal less, say, but 3,582,750 tons, against 3,911,192 in 1872. The import duty on Coal and Coke in France, which had been raised from 1·20 francs per ton in 1861 to 1·30 two years ago, has been increased by ·48 centimes since the 1st instant, and is now 1·348 francs per ton of 1000 kilos.

CHARLEROI, Jan. 14, 1874.—*Iron*—Cast is in better demand than Wrought Iron, and of the former some considerable purchases have been made. The demand for Wrought Iron is but moderate, nor can we quote the same above 23 francs. *Coal* is more favorably situated, with some contracts making at 26 francs. Lump Coal is in active request; in fact, with the sole exception of bituminous, all classes are wanted.

HOLLAND.

(Wm. Brummer, Schroder & Co.)

ROTTERDAM, Jan. 17, 1874.—The market for Tin has been remarkably firm during the week, but closes easier. Banca on the spot has been done at 73¼, 74 and 73 guilders; delivery from next auction has been up to 74⅛, thence down to 73⅛, and from the second sale from 73⅜ down to 72⅛. Spot Billiton, 72.

LATE TIN TELEGRAM.

Koch & Vlierboom.

ROTTERDAM, January 29, 1874.—*Tin.*—Banca Tin sale of 20,800 slabs averaged 70⅛ guilders, which is equal to a parity at London of £121.

EAST INDIES.

(Gilfillan, Wood & Co.)

SINGAPORE, Dec. 17, 1873.—*Tin* has been in active request, and prices have steadily advanced to our present quotation of $32·75 to $32¾, per picul for Malacca.

Telegraphic, Jan. 29, 1874.—Tin, $31·25.

(Aitken, Spence & Co.)

COLOMBO (Ceylon), Dec. 23, 1873.—*Plumbago*—We have again to report a quiet market, without any transactions to report. Prices are weaker, but nominal. There are large shipments being made for London, and owing to the pressure to get them off, freights have risen to 72/6 to 75/ per ton, which is an unusual figure. These shipments are principally, if not entirely, in fulfillment of old standing orders. The total shipments since Oct. 1st are 1471 tons, against 1300 tons for the same period last year. The payment of royalty on this mineral having been much evaded in the mining districts, government has decided on imposing an export duty of 5 per cent. *ad valorem*, which enactment goes into force on the 1st of April next. The shipments of Plumbago from Colombo and Galle since the commencement of the season (Oct. 1st) have been: To the United States, 15,180 cwts.; and to the United Kingdom, 14,236 cwts.; together, 29,416; against 25,994 in 1872-1873, 34,517 in 1871-1872, and 14,303 in 1870-1871. We quote: Lump, free on board, with commission, exchange at par, 430/6 per ton; Chip, 210/; and Dust, 105/. Freight to London, 72/6 by sail and 90/ per steam. *Exchange*—1/10 11-16.

Our English Letter.

Review of the British Iron, Steel, Metal and Hardware Trades.

(From our Regular Correspondent.)

SHEFFIELD, Eng., January 20, 1874.

THE TRADES CONGRESS.

One of the principal, perhaps I may say the principal, events of the last week has been the assemby, at Sheffield, of the Annual Congress of the Trades Unions. You will no doubt have received the report of the first two days' proceedings sent off by me last week, so that I shall not now dwell upon that part of the matter at any length. It will not have escaped your notice that about a million trades unionists were represented, some of the societies being of very large proportions. Of these the National Miners' Association and Amalgamated Association of Miners are fair examples. The first day was mainly taken up with the examination of credentials and the election of officers, but toward the close of the afternoon the report of the Parliamentary committee was reached. I shall not need to recapitulate that part of this report which dealt with the subject of the employers' federation, but I feel bound to say that the unionists apparently have good reason for stating that "they do not anticipate any very disastrous results from the formation of the federation." At the next day's sitting a paper was read on this subject by Mr. Henry Crompton, who is a London barrister, specially retained as legal adviser to the unions, and has, in some sort, the reputation of a well-versed political economist. This paper reviewed the objects and the recently issued memorial of the federation, analyzed its statements, refuted its arguments, disputed its facts, and concluded by stating that "it can have no effect upon the cause the trades unions have at heart." On the question of the Criminal Law Amendment Act, which has been far more provocative of angry feeling on the part of the trades unionists than a scarlet rag ever was to the very maddest of bulls, there was a long discussion, in which Mr. Mundella, M. P., took a prominent part. Professor Goldwin Smith put in an appearance during this discussion, and received an invitation, on the motion of Mr. George Odger—to address the great public meeting on the Wednesday evening. So many resolutions, amendments and "riders" were put forward on this vexed question that the president became confused as to what was really doing, and the congress, as a whole, lost its head, metaphorically speaking. Ultimately the various movers and seconders were asked to withdraw, in order to arrive at a common and single resolution, which they did in time for presentation at the next day's sitting. This resolution called upon all trades unionists to use every exertion to get the act repealed, and pledged them to leave no stone unturned to effect that end. It further stated that if the act was not repealed during the ensuing session, it would be the duty of all workingmen to oppose candidates supporting it, and that unless the government consented to repeal the act, Mr. Mundella should be asked to introduce a bill for that purpose on the first night of the session. Just prior to the suspension of proceedings on the Tuesday evening an important letter was read from the Ligue Universelle Des Corporations Ouviers," Geneva, which, in effect, asked the congress to join a general federation of trades unionists throughout the world. This document was signed by secretaries purporting to represent Italy, Germany, France, Austria, Switzerland and Spain. The congress, very wisely, as I believe, declined to discuss the matter, albeit several resolutions advocating good fellowship and brotherly advice were put forward, and passed a resolution that the matter stand over until the next congress. On the conspiracy laws a resolution was passed characterizing the existing law as vague in its character and excessive in its penalties, pledging the congress to use every effort to secure an amendment thereto. Mr. McDonald, president of the Parliamentary Committee, offered a prize of £30 for the best essay on the Objects and Merits of Trades Unions, which he increased later on in the week to £50. A resolution, condemnatory of the Masters' and Servants' Act, was passed, as also was one condeming, in unmeasured terms, the administration of the law by "an irresponsible, clerical and unpaid magistracy." A discussion took place as to contracts. A motion was put to the congress advising workmen to carefully avoid entering into contracts, but an amendment, requesting each trade to discontinue the practice as far as its custom would allow, was carried. Mr. Mundella's Nine Hours' Bill was also adopted and recommended. Mr. Fawcett's recent letter to *The Times* met with a severe handling, and its implied meaning—that the unions desired to prevent women from earning a livelihood—was unshirkingly repudiated. On the Wednesday evening the great public meeting in connection with the congress was held. Professor Goldwin Smith was one of the chief speakers. He gave the result of his American experience, some of his advice on the subject of emigration being very far from complimentary to the United States. He said there was a very bitter feeling against England in the States—particularly in the Eastern States—which was particularly unpleasant to Englishmen residing there. He did not advise them to emigate to the States. They had better go to Canada, where they became citizens the moment they entered the country, and had not, as in the States, to wait five years before they could become naturalized. For myself, I must say that I never thoroughly understood the cause of the learned Professor's radicalism. That he, a professor at one of the most Tory of the seats of learning, should turn round and inveigh so bitterly against toryism, is to me only to be accounted for in one way. It is, that he has, at some time or other, set his mind upon the attainment of one particular and highly cherished object—and that he has failed. Whether this might be the non-passing of some particular examination, the loss of some wished for appointment, a disappointment in love affairs, or otherwise, I cannot say, but I repeat that his cold, asceticism, and sudden out and out radicalism, his abuse—politely worded, but still abuse—of the conservative cause here and its leaders, must be attributable to some such beginning. It *may* be that Mr. Disraeli stung him in "Lothair." Mr. Arch also addressed this meeting.

A BREAKFAST.

Next day the members of the Congress were entertained to a breakfast at the Victoria Station Hotel, by some of the leading employers of labor of the town.

On a discussion as to Sir. John Lubbock's bill, relative to the employment of women and children in specified trades, the congress thought it would be desirable to extend its operation to all industry alike. A delegate from Leek (Staffordshire) was ill-advised enough to read a paper stating that the silktwisters of that town would be injuriously affected by the passing of any bill which had for its object limitation of women's or children's hours, and that in the event of such a bill passing 97 men in his town, would be more or less injured. The congress waxed wroth at this, and indignantly rejected the paper.

POSTAL EMPLOYEES, ETC.

A very interesting paper was read on this subject by Mr. George Howell, secretary to the Parliamentary Committee, advocating increased pay for them, and upholding their right to combine. The congress also passed resolutions condeming the truck system in any shape whatever; on the subject of compensation to workmen; in favor of workingmen members of Parliament; in favor of practiced inspectors of workshops and mines; asking for the extension of the county franchise, so as to assimilate it with the borough franchise; in favor of all trades unions becoming connected with the various trades councils; discouraging overtime; stating the workmen in any trade ought to have a voice in the limitation of apprenticeship; recommending the discontinuance of piece work; encouraging productive co-operation; condemning the employment of convict labor in competition with "free" labor; against the employment of soldiers in agriculture; asking for a Royal Commission to inquire into the jurisdiction, appointment, &c., of the magistracy; stating the time had come for workingmen to be admitted as jurymen approving of the erection of trades halls; appreciation of the principles and practice of international arbitration; stating that arbitration was the best means of settling disputes, strikes and lockouts; and in support of Mr. Plimsoll's crusade against rotten and overladen ships.

This was a goodly programme for the week, you will perhaps say, to which I reply that a great deal more might have been done had the congress shown as strong a desire to do business on the first two as on the last day. A great deal of time was lost through the speechifying proclivities of some delegates, who apparently had a wager pending settlement by the number of times they addressed the assembly. At times the congress was a bear garden on a small scale, and others it was not unlike a raree show. On the whole, I suppose that, taking into consideration its heterogeneous constituent parts, it did its work fairly well, and perhaps did not lose more time than other deliberative assemblies—your Congress and our House of Commons for instance—of a more reputable nature. Many of the delegates were fine looking men, and some were anything but that. A few were very rough diamonds, some were of highly intellectual mien, but, taken in the aggregate, they were, I think, about an average lot of men, with this exception—that, as "leaders of men," most of them were very self-willed. To the unvarying courtesy, intelligent assistance and general attention of Mr. George Howell, the secretary, I am glad to bear the most cheerful testimony.

THE STATE OF TRADE.

I find that I have dwelt upon the trades congress to such length that I have but little space left wherein to detail the state of trade. Luckily the changes of the past week have neither been numerous nor important. At Glasgow pig warrants are steady at 107/6, and makers' figures are as under: Gartsherrie, No. 1, 114/; No. 3, 107/6; Coltness, No. 1, 117/6; No. 3, 109/; Summerlee, No. 1, 112/6; No. 3, 107/; Carnbroe, No. 1, 111/; No. 3, 107/; Monkland, No. 1, 108/; No. 3 106/; Clyde, No. 1, 108/6; No. 3, 106/; Govan, No. 1, 108/; No. 3, 106/; Langloan, No. 1, 115/; No. 3, 107/6; Calder, No. 1, 112/6; No. 3, 107/6; Glengarnock, No. 1, 112/; No. 3, 107/6; Eglinton, No. 1, 107/6; No. 3, 105/; Dalmellington, No. 1, 108/; No. 3, 106/; Carron, No. 1, 112/6; Shotts, No. 1, 112/6; No. 3, 108/6; Kinnell, No. 1, 107/6; No. 3, 102/6.

The shipbuilding and manufactured iron trades are in a satisfactory condition, both in Scotland and in the Tyne district. In the Cleveland district, which includes the Tyne ports, the rail mills are getting better employed, some of those laid by for several months past being again in operation. The pig made in the district is also somewhat firmer. The iron trade of the Barrow, Bradford, Lancashire and Derbyshire districts is without change; neither can much alteration be conscientiously recorded in connection with the trades of Sheffield and Birmingham. At this town the steel and iron works are running short time, as before the holidays, but I hear that the fall in coke, coal and wages may possibly stimulate trade somewhat by enabling quotations to be lowered. Some of the cutlery houses are better employed. I hear of a few respectable orders from America for razors, best table knives and pocket cutlery. In other respects there is no amendment. The iron trade of South Staffordshire, South Wales and Birmingham, and the hardware trades of the last named district, are wholly unchanged.

METALS.

Copper—The market for foreign descriptions has been very quiet, and has declined about 20/ per ton since our report of the 9th inst. The charters for the first half of December are advised by wire as equal to 2100 tons fine copper. The price of bars on the coast was unchanged, $18·45 per qtl. Transactions have been on a limited scale. Chili bars, picked brands, sold at £83. 5/ to £84. 10/, and Lota and Urmeneta £83. 10/, down to £82. 10/; Wallaroo, £93. 10/ to £93; Burra, £93 to £91. 10/. The market closes dull. 200 tons ores sold at 16/7½ per unit. Manufactured only in moderate request at £98 for strong sheets, and 8½d. for yellow metal. Tough cake and ingot £90 to £91, and best selected £93. *Tin*—The improvement in foreign has been maintained throughout the week, with a fair business in Straits at 119/ to 121/6, cash; 119/ January steamer shipment; 50 tons Banca, Billiton or straits at 118/, sellers' option, half January half February. Australian sold at 114/ to 115/. The market closes steady at quotations. English in fair request at 119/ to 120/ for ingot. Tin plates in steady demand at quotations. *Iron*—No special change or improvement since the quarterly meeting last week. Spelter quiet, with sales of common brands Silesian at £25. 10/ to £26, and specials £26 to £26. 2/6. Lead unsettled.

London Metal Market.

(From The Mining Journal.)

	£.	s.	d.	£.	s.	d.
Copper—₱ ton.						
Best Selected	93	0	0	94	0	0
Tough Cake & Tile	91	0	0	92	0	0
Sheathing and Sheets	97	0	0	98	0	0
Bolts	102	0	0	103	0	0
Bottoms	100	0	0	102	0	0
Old (Exchange)	85	0	0	86	0	0
Burra Burra	92	0	0	93	0	0
Wire ₱ ℔.	0	1	0¾		—	
Tubes "	0	1	0⅝	0	1	1
Brass—₱ ℔.						
Sheets	0	0	10	0	0	11
Wire	0	0	10¾		—	
Tubes	0	0	11⅜	0	0	11⅝
Yellow Metal Sheathing	0	0	8⅝	0	0	8¾
Sheets	0	0	8⅝		—	
Spelter—₱ ton.						
Foreign	25	10	0	26	0	0
" to arrive	25	10	0		—	
Zinc—₱ ton.						
In Sheets	32	0	0	33	0	0
Quicksilver—₱ bottle	19	0	0	19	10	0
Tin—₱ ton.						
English Blocks	121	0*	0	122	0	0
Ditto Bars	122	0	0	123	0	0
Ditto Refined	123	0	0	124	0	0
Banca	116	0	0	118	0	0
Straits	118	0	0	121	0	0
*Tin Plates—† ₱ box.						
IC Charcoal 1 qual.	1	17	0	1	19	0
IX " 1 qual.	2	5	0	2	5	0
IC " 2 qual.	1	15	0	1	17	6
IX " 2 qual.	2	1	0	2	1	0
IC Coke	1	9	6	1	11	0
IX "	1	15	6	1	17	0
Canada Plates ₱ ton.	21	0	0	21	10	0
" at works	20	0	0	21	0	0
Iron—₱ ton.						
Bars Welsh, in London	12	5	0	12	10	0
" to arrive	11	17	6	12	0	0
Nail Rods	12	5	0		—	
Nail Rods, Staff'd in L'ndon	12	10	0		—	
Bars	12	10	0	14	0	0
Hoops	14	5	0	15	0	0
Bars at Works	11	10	0		—	
Hoops ditto	13	10	0	14	0	0
Sheets, single	14	10	0	15	10	0
Pig, No. 1, in Wales	5	0	0	6	10	0
Refined metal ditto	7	0	0	8	0	0
Bars, common ditto	11	0	0	11	10	0
Do. merchant, Tyne or Tees	11	5	0	11	10	0
Ditto, Railway, in Wales	10	0	0	11	0	0
Ditto, Swedish, in London	19	5	0	19	10	0
To arrive	20	0	0	21	0	0
Pig, No. 1, in Clyde	5	5	0	5	15	0
Ditto, f.o.b., Tyne or Tees	4	10	0	5	10	0
Ditto, Nos. 3, 4, f.o.b		—			—	
Railway Chairs	5	5	0	6	0	0
" Spikes	12	10	0	14	0	0
Indian Ch'coal Pigs in L'don	10	0	0	12	0	0
Steel—₱ ton.						
Swedish, in kegs (rolled)		—			—	
Ditto (hammered)	21	0	0		—	
Ditto, in faggots	22	0	0		—	
English, spring	24	0	0	45	0	0
Lead—₱ ton.						
English Pig, common	24	0	0		—	
Ditto, LB	24	5	0		—	
Ditto, WB	25	0	0		—	
Ditto, Sheet	25	5	0	25	10	0
Ditto, Red Lead	28	10	0		—	
Ditto, White	30	0	0	32	0	0
Ditto, Patent Shot	25	0	0		—	
Spanish	22	5	0	23	10	0

* At the works, 1s. to 1s. 6d. per box less. Terne plates 2s. per box below tin plates of similar brand. ‡ Nominal. † Add 6s. for each X.

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Water Coolers, Water Filters, Bathing Apparatus, Tea Trays, &c.

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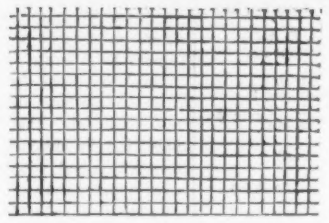


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"WIDE AWAKE" AXES.

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The demand for these Superior Hoes is increasing so rapidly, we advise merchants who wish them to send in early orders, which will be filled in rotation as received. We hope not to disappoint as heretofore for want of goods. Every Hoe is warranted and prices are uniform. Address,

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The Best and Cheapest made.



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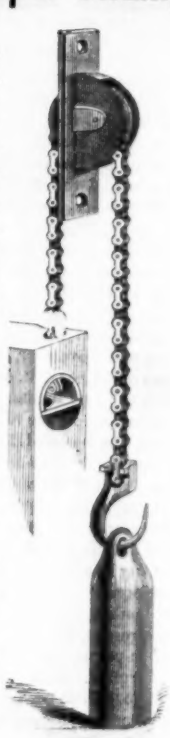
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Manufacturer of

Brass & Copper Chain,



And patented attachments for same, for suspending windows, from 100 to 1500 lbs. Sashes can be suspended with my Chain and attachments in a shorter time and with less trouble than by using the ordinary common cord. I am now offering the Chain and fastenings cheaper than any other in the market. Also manufacturer of the MORTON & BREMNER'S Straight and Circular Spring Balances. Established in 1842.

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THE NICHOLSON FILE.

All Nicholson Files are cut with the Patent *Increment Cut*, an invention owned and controled exclusively by us, the file cut in this manner being Patented as a new article of manufacture, and differs from all other machine cut files (all of which have their teeth cut with equal spaces) by being cut with teeth slightly *expanding or increasing in size and space from the point*, thus avoiding the too great regularity of teeth common to all other machine cut files. The tendency of all cutting tools with teeth or cutters placed at regular distances from each other may be illustrated (to the machinist at least) by the fluted reamer—as it is well known that if a round reamer be made with (say 12) teeth whose spaces are equidistant, the hole reamed will *not* be round and smooth, but will approximate to a hexagon in shape. Whereas, if the same number of teeth be made of irregular distances, the hole reamed will be both round and smooth. The same is true of a file, hence the necessity of its having teeth at unequal distances, and to which we have applied the name of Increment Cut File, which possesses all the advantages of hand cut work, and the accuracy and uniformityof machine work. It is now upwards of seven years since this File was introduced to the public, and the demand has increased until our production is undoubtedly treble that of any File manufactory in the country.

We put all files under seven inches in boxes of either one-half or one dozen each. These boxes are neatly arranged, and open on the end, on which the kind is plainly marked with printed labels, acknowledged improvements on the old methods.

The "*Increment File*" is not an experiment, but an established fact, and already has acquired a legitimate demand for upwards of 500 dozen per day. We employ no *regular Travelers*, but our goods may now be found in the hands of the principal jobbers and dealers throughout the country.

Prices and terms will be forwarded on application to

NICHOLSON FILE COMPANY,
Providence, R. I.

1816. *H. F. F.* — *1844.* *H. F. F. & SON.* — *1850.* *P. A. F.* — *1868.* *P. A. F. & CO*

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Steel Wire for Sewing Machine Needles and for other Purposes,

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XTRA QUALITY,

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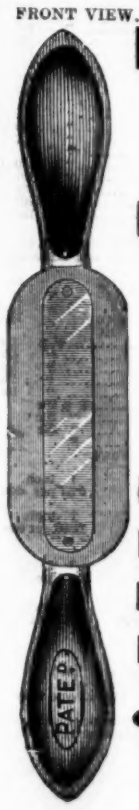
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Bonney's Patent Adjustable Gate Hinge.
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PYROMETERS for BLAST FURNACES.

E. BROWN'S STANDARD PORTABLE,
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E. Brown's Portable Blast Gauge for the plug hole, Steam Gauges, Blast Gauges, Mercury Gauges, Recording Steam Gauges, Engine Counters, Indicators for ascertaining the Horse Power.



Over 200 Gauntlets and 60 Portable Pyrometers are now in use at Blast Furnaces.

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"The Celebrated Stock House Scale,"

New Style Testing Machines, all sizes, Wrought Iron Lever R. R. Track Scales, Parallel Crane Beams and Mortising Machines.

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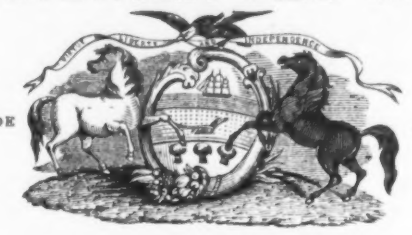
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Manufacturers of FIRST QUALITY FILES and RASPS ONLY,

Nos. 1732 & 1734 North Fourth Street, Philadelphia, Pa.

Coopers' & Turpentine Tools.

Coopers' Drawing Knives,
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Stocked Croze and Irons,
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Turpentine Hackers,
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Reading Hardware Co.	Barnes & Deitz.	Underhill Edge Tool Co.
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Vulcan Horse Nail Co.	Langstroth & Crane.	T. T. Rhodes.
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Manufacturers of Judds', Prindle's and Combination Patent Curtain Fixtures, Locks and Curtis Patent Raisin Seeder, Patent Twine Boxes, Picture Nails and Hooks, Escutcheon Pins, Coat and Hat Hooks; also Miscellaneous Iron and Brass Goods.

Small Brass and Iron Castings made to order.

64 Duane Street, NEW YORK.

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AGENTS FOR:

William Penn, Reading and Norristown Pig Iron.
Reading Iron Co.'s (Crescent Brand) Nails, Boiler Flues, &c.
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Wm. Jessop & Sons' Steel and Norway Nail Rods.
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Fisher & Norris' "Eagle" Anvils and Vises.
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MANUFACTURERS OF AMERICAN HARDWARE.

Coes & Taft's Pat. Wrenches.	Mouse Traps. Wire Seives.	Yaw's Cow Bells.
Axe, Pick, Sledge & Hammer Handles.	Scale Beams.	Axes, Picks and Hatchets
Hatchet, Auger, Chisel & File Handles.	Patent Tap Borers.	Hammers. Crow Bars.
Mallets. Pat. Boot Jacks.	Tool Chests.	Sad Irons.
Gimlets and Gimlet Bits.	Climax Horse Collars.	Boring Machines.
Augers and Auger Bits.	Brundage Horse Nails.	Cast Iron Hatchets
Cocoa Nut Dippers.	Maguire's Wr't Iron Goods.	Coffee Mills.
	Shattuck's Platform Counter Scales.	Star Steel Spoons' Stocks and Dies.

New York Wholesale Prices, February 4, 1874.

HARDWARE.

Anvils.
Solid Cast Steel.....₩ ℔ 14c
Wright's.....₩ ℔ gold 12c; over 250 ℔s 12½c, gold
Armitage's Mouse Hole.....gold 11c
Wilkinson's.....₩ ℔ gold 11½c
Eagle Anvils, ₩ ℔ 11c currency.....dis 15 @ 15&5 %

Apple Parers.
Turn Table.....
Lightning.....} $6·50 ₩ doz
Conqueror.....
Reading.....₩ doz 8 00
Union.....₩ doz 9 00
Bay State, Paring, Coring and Slicing.....15 00 } dis
Skeleton " " " .....9 00 } 5 %
Climax Slicer.....9 00
Bay State Peach Parer.....$11 00 @ 11 50
Lightning " " .....11 00 @ 11 50
Peach Stoner and Halver.....7 00

Augers and Bits.
Snell Mfg. Co.....dis 15 @ 20 %
Russell Jennings.....dis 10 %
Douglass Mfg. Co., Extra.....
" " No. 1.....
" " Hollow Augers.....
Cushman's Expanding Hollow Augers.....dis 30&10 %
Ives' Augers and Bits.....dis 30&10 %
" Gouge Lip Augers and Bits.....dis 30&10 %
" Hollow Augers.....dis 30&10 %
" Expansive Hollow Augers.....dis 30&10 %
" Expansive Bits.....dis 20&10 %
Andrews' Bits.....dis 30 %
Cook's Patent Augers.....dis 50 %
" " Bits.....dis 40 %
Shepardson's Double Cut Bits.....dis 20 %
Griswold's Patent.....dis 20 %
Caststeel Cut Augers.....dis 30&10 %
" Auger Bits.....dis 30&10 %
Long Augers.....new list dis 30 %
Bonney's Patent Hollow.....$48 per doz—dis 25 %
Stearns' " " .....$48 per doz—dis 30 %
Morse's Bit Stock Drills.....dis 20 %
Robies Mfg. Co. C. S. Cut Augers.....dis 30&10 %
Watrous Snip Augers.....dis 10 %

Axes.
Blood's.....$12 50 @ 14 00
Hunt's.....₩ doz $15 00 @ 17 50 net @ dis 5 %
Collins'.....₩ doz 11 00 @ 16 00 net @ dis 5 %
Hurd's.....₩ doz 12 50 @ 13 50
Schweitzer Mfg. Co.'s.....₩ doz 13 00 @ 15 00
Simmons'.....₩ doz 12 50 @ 14 00
Morris'.....₩ doz 12 50 @ 13 50
Red Jacket.....₩ doz 12 00 @ 12 50
Mann's.....₩ doz 12 50 @ 13 00
" Double Bitted.....₩ doz 21 50 @ 22 00
Powell Tool Co., "Peerless".....₩ doz 13 00 @ 14 50
Underhill's.....₩ doz 12 50 @ 13 50
" Crown.....₩ doz 13 00 @ 14 00
John Leverett's.....₩ doz 12 50 @ 15 50
Nobles Mfg. Co. S. B.....₩ doz 12 50 @ 13 00
" D. B.....₩ doz 22 00 @ 23 00

Balances.
Chatillon's.....
Frary's.....} new list dis 15 %
Morton's.....

Bands.
Plated.....new list dis 50&5 %
Iron Rim.....new list dis 15&5 %
Brass (Plated list).....new list dis 50, 10&5 %
Oroide.....new list dis 50&5 %

Bell Hangings.
Hand, Light Brass.....dis 60&10 @ 65&5 %
White Metal.....dis 45&10 %
Globe.....dis 30 %
Abbe's.....dis 10&10 %
Taylor's Patent Door.....net
Western Gong.....net
Brook's Crane.....dis 10 %
" Pull.....dis 15&10 %
Hart Mfg. Co., Crank and Pull.....dis 50&10 %
Cow—Common Wrought.....dis 20&10 %
Western.....new list dis 30&10 %
Kentucky "Star".....new list dis 20&10 %
Dodge's Genuine Kentucky.....new list dis 25 %
Yaw's Genuine.....dis 20 %

Bellows.
Blacksmiths'.....dis 15 %
Moulders'.....dis 15 %
Hand Bellows.....dis 10 %

Blind Fasteners.
Van Sand's.....₩ gross $14 00
Washburn's Patent.....₩ gross 14 00
Merriman's.....

Blind Staples.
Boardman's Patent, ½ in. and larger.....₩ ℔ 37 c
" ⅝ in....." 42 c

Bolts.
Carriage and Tire, Ætna Nut Co.....dis 60 %
Stove, Ætna Nut Co.....dis 10&5 %
Cast Iron Barrel, Shutter, &c.....old list dis 35&10 %
Wrought Iron Barrel.....net
" " Square.....dis 10&10 %
Carriage and Tire, Common.....dis 70&10 %
" " Norway Iron.....50&10 %
Star, Philadelphia.....dis 50 @ 50&10 %
Eagle, Philadelphia.....dis 50 @ 50&10 %
Ekelly's Phila. Norway Iron Finished Points...dis 50&5 %
Philadelphia Pattern, P. S. & W.....dis 50&10 %
Carriage and Tire, R. B. & W.....old list dis 50&5 %
Plow, R. B. & W.....dis 30 %
Stove, R. B. & W.....dis 10 %
" Shelton Co. Shaved Heads.....dis 15 %
Union Nut Co.. old list.....dis 50&2 %
" " Stove.....dis 15 %
Machine.....dis 30&10 %

Borax.—In cases of 100 lbs.....₩ ℔ 19c
In barrels.....₩ ℔ 18c

Boring Machines.
Kellogg's.....dis 15 %
Snell Mfg. Co., Ilice's Patent.....dis 15 %
" " Regular.....dis 15 %
Douglas Mfg. Co.....dis 20 %
Mortising Machines each.....$18 00
" " .....dis 50 %

Bow Pins.

Braces.
Barger's Patent.....dis 40 %
Wilson Mfg. Co.....net
Spofford's Patent.....dis 40 %
Noble's Patent.....dis 40 %
Bartholomew's American Ball.....dis 10&10 %
" Patent Grip.....dis 40 %
Q. S. Backus & Co.....dis 30&10 %
Ives' Novelty.....dis 40 %
Empire.....dis 30&10 %

Bull Rings.
Bung Hole Borers.
Common and Ring.....dis 25 %
Enterprise Mfg. Co.....dis 30&10 %
Ives' Tap Borers.....dis 25 %

Butchers' Cleavers.
Bradley's.....dis 25 %
Beatty's.....new list dis 10 %

2	3	4	5	6	7	8	9
$19·00	$21·50	$24·00	$27·00	$30·00	$33·50	$36·50	$40·00

Hart Mfg. Co.....dis 45&10 %

0	1	2	3	4	5	6
$25·25	$29·75	$30·25	$33·75	$43·25	$49·50	$54·00

Butts.
Wrought Brass.....new list dis 25 %
Cast Fast Joint, Narrow.....dis 40 %
" " Broad.....dis 40 %
Cast Loose Joint.....dis 50 %
" " Mayer.....dis 40 %
" " Parliament.....dis 40 %
Loose Pin.....dis 40&10 %
Wrought Fast Joint, Narrow.....dis 30 @ 30&7½ %
Wrought Broad.....dis 35&7½ %
" Loose Joint.....dis 35&7½ %
Wrought Table and Back Flaps.....dis 3.&7½ %
Cast Butts, Ohio Butt Co.—
Narrow Fast, Drilled and Wire Jointed (old list).....dis 35 %
Broad Fast, Drilled and Wire Jointed.....dis 33 %
Broad, Loose, Drilled and Wire Jointed.....dis 45 %
Silver Tipped.....dis 15 %
Loose Joint, Japanned.....dis 25 %
Loose Joint, Acorn and Silver Tipped.....dis 40 %
Palmer Blind Butts.....dis 30&10 %
Nicholson Blind Butts.....dis 40&10 %
Parker's Blind Butts.....dis 40&10 %
Cherritree Blind Butts for wood.....dis 50 %
A. S. Parker's.....dis 40&10 %
Clark's Surface Blind Hinges. Nos. 1, 3 and 5...dis 40&10 %
" " No. 20.....dis 50&10 %
" " Mortise " " .....dis 30&5 %
Seymour's.....dis 40&10 %
Shepard's.....dis 40&10 %
Garretson's.....dis 40&10 %
The American Spiral Spring Butt Co.....dis 20 %
Standard.....dis 40&10 %
Union Mfg. Co.—
Drilled and Wired Cast Fast.....dis 35 %
" " Loose.....dis 45 %
Loose Joint Japanned or Silvered Acorn.....dis 40 %
" " Figured Enameled.....dis 25 %
" " Nickel Capped.....dis 30 %
" " Solid Bronze.....dis 10 %

Caps—Percussion, per 1000.
G. D.....40c
Ely's E. B.....1-4s, 55c.; 1-10s, 65c., gold
" Double Waterproof, 1-4s, $1·45; 1-10s, $1·52½c., gold
Colt's.....1-10s, 70c., gold

Cartridges.
Metallic.....dis 50 @ —%
Cards.—Horse and Curry.....dis 25&10 %
Cotton.....new list dis 10&10 %
Wool.....new list dis 10&10 %

Casters.
Iron and Wood Wheel Plate.....new list dis 25&10 %
Brass Wheel Plate.....new list dis 25&10 %
Porcelain Wheel Plate.....dis 50 %

Cattle Leaders.

Chain
Electric Coil, by the cask.....net gold

	13½	10	9½	8½c	8½	8¼c
₩ ℔.....	5-16		5-16	⅜	7-16	⅜

Trace, 6-10-2.....₩ pair, gold, 65c
Trace, 7-10-2.....₩ pair, gold, 68c
Galvanized Pump Chain.....₩ ℔ 14c
German Halter Chain.....new list, Jan. 1, dis 10 %
German Coil.....new list, Jan. 1, dis 10 %
Jack Chain, Iron.....dis 40&10 %
" Brass.....dis 25&10 %

Chalk.
White, A.....₩ gross, 50c
Red.....₩ gross, 75c
Blue.....₩ gross, 90c
Crayons.....₩ gross, 14c

Cherry Stoners.
" Family".....₩ doz $9·00

Chisels.
Socket Firmers.....dis 50&10 @ 60&10 %
Socket Framing.....dis 60 @ 60&10 %
Socket Corner.....dis 60 %
Tanged Firmers.....dis 40 to 40&10 %
Butcher's.....$5·50 to £ gold—new list
Newbould's.....$5·50 to £ gold
Spear & Jackson's.....$5·50 to £ gold—new list

Clips, Axle.
Norway or Best.....dis 25 %
Superior.....dis 50 %
"Star," Superior Philadelphia.....dis 45&5 %

Coal Shovels.
Iron Handled.....₩ doz, $ 85 @ 1 25
Wooden Handled.....₩ doz, 1 00 @ 2 00

Coal Hods.—Smith, Burns & Co.....dis 25 %

No.	14	15	16	17	15	
Japanned	$9·00	9·75	10·50	12·00	13·50	per doz
Galvanized	13·00	14·50	15·50	17·50	19·50	"

Coal Hods.
Japanned.....dis 30 %
Morning Glory.....

No.	15	16	17	
Japanned	$12·50	13·50	15·50	per doz
Galvanized	18·00	19·50	21·00	"

Cocks.
Brass Racking.....dis 25&10 %
Lock and Globe.....dis 25&10 %

Coffee Mills.
Board and Box.....dis 15 %
Increase Wilson's.....new list dis 10 %
Selsor's Pat.....$9·50, $10·50—dis 20 %
French Steel.....dis 15 %
American.....dis 20 %
Swift's.....dis 20 @ 25 %

Compasses and Dividers.
Bemis.....dis 15&15 @ 20&5&15 %
Excelsior.....dis 30 %
Peck Stow & Wilcox.....dis 25 %

Coopers' Tools.
Bradley's.....dis 15 @ 20 %
Chas. E. Little.....dis 15 @ 20 %

Corn Knives and Cutters.
Bradley's.....dis 10 %

Crucibles.
Gautier & Co.....₩ No. 5¾c

Curry Combs.
Hotchkiss' and Kellogg's, Iron and Brass.....dis 15 %
Fitch's.....dis 20 %
Ruggles'.....dis 15 @ 20 %
Rubber.....₩ doz, $9·00—dis 10 %
Schweitzer Mfg. Co.....dis 20 %

Curtain Pins.
Silvered Glass.....dis 40&10 %

Cutlery.
American Table.....
American Pocket.....dis 25 %

Door Springs.
Gray's.....$7·50 per doz—dis 40&10 %
Torrey's Patent.....$7·50 ₩ doz—dis 40 @ 40&10 %
Palmer's Japanned No. 6.....₩ doz $5·00
" Co ppered " ....." 6·00
" Silvered " ....." 8·00
Challenge.—
Japanned.....₩ doz $4 00 @ 6 00
Bronzed.....₩ doz 5 00 @ 7 00
Nickel Plated.....₩ doz 6 50 @ 9 00
1 Gross lots.....dis 10 %
5 Gross lots.....dis 20 %

Drawing Knives.
Bradley's.....dis 60 @ 60&10 %
Adjustable Handled.....dis 25 %
.....dis 10 %

Drills.
Ingersoll's Ratchet.....dis 25 %
Moore's Triple Acting Ratchet.....dis 20 %

Drug Mills.
American Drug Mills.....dis 20 %

Egg Beaters.
Mourse's.....₩ doz net $6·25 @ 8·50
Earle's Patent.....₩ doz net 5·50 @ 6·00
Dover.....₩ doz net $6·00
National.....₩ doz $4·50—dis 10 %
Peerless.....₩ doz net $4·00

Emery.
Genuine Chester—Regular Nos.....₩ ℔ 8c } dis 5 @ 10 %
" Flour and FF.....₩ ℔ 5c }
Washington Mills—Regular Nos.....₩ ℔ 8c
" Flour.....₩ ℔ 5c

Enameled and Tinned Ware.
Kettles.....dis 25 %
Sauce Pans, Glue Pots, &c.....dis 15 %

Faucets.
Cork Lined, Wood.....dis 60 %
Fenn's.....dis 50 %
" Cork Stops.....dis 40 %
Star.....dis 55&10 %
Frary's Patent Petroleum.....dis 10&10 %
Taylor's Pattern " .....dis 20&10 %
Wood and Metallic.....dis 40 %

Files.
Nicholson.....$5 00 to £ currency—dis 10 %
Newbould's.....5 25 to £ gold
J. & Riley Carr's.....5 50 to £ gold
" " Rasps.....5 75 to £ gold
Stubs'.....8 50 to £ gold
Butcher's.....5 50 to £ gold
Spear & Jackson's.....5 50 to £ gold
Hargreaves, Smith & Co.'s.....5 00 to £ gold
Jowitt's.....5 25 to £ gold
" Western".....5 00 to £ net
W. K. & C. Peace's "Imperial".....5 00 to £ gold
R. Dobson.....5 00 to £ gold
Beam & Murray, "Cyclops".....4 85 to £ gold
Fisher's.....4 75 to £ gold
Goodlad's.....4 00 to £ gold
Moss & Gamble.....$ 25 @ 5 50 to £ gold

Flutin Machines.
Acme.....$7 00 each net
Manville, No. 3.....7 00 each net
Knox, with 4-inch Rolls.....5 00 each net
" " 6 " .....6 00 each net
O. K.....6 50 each net
Peerless, 4-inch Rolls.....4 00 each net
" 5 " .....5 00 each net
Excelsior, No. 1.....4 75 each net
" No. 2.....6 50 each net
Diamond.....7 50 each net
Climax 7-inch Rolls.....8 00 each net
" 9½ " .....6 50 each net
Empire.....4 00 each net
Eureka, No. 1, 7-inch Roll.....8 00 each net
" No. 2, 5-inch Roll.....6 00 each net
K. F. M., 4½-inch Roll.....5 50 each net
" 6-inch Roll.....6 00 each net
Myers' Fashion Fluter, 4½-inch Rolls.....8 00 each net
" Convex Brass Fluter, Sad Iron attachment...$1·75
Domestic Fluter.....$1·75 each net
Fairy, Self-Heater.....9 00 each net
National, 5-inch Rolls.....5 00 each net
Ponton Fluter, Bright.....$1 50—dis 25 %
" " Galvanized.....2 00—dis 25 %
Geneva Hand Fluter.....$15 00 per doz net
Champion, 6 inch rolls.....$6 00 each net

Fry Pans.—P. S. & W.
Tinned.....dis 25 %

₩ doz....	$3·00	3·25	3·62	4·00	4·50	5·00	5·50	6·00	7·50
No.....	0	1	2	3	4	5	6	7	8

Smith, Burns & Co., "Excelsior" Polished.....dis 20 %

₩ doz....	$3·70	4·00	4·70	5·30	6·00	7·00	8·00	9·00	
No.....	1	2	3	4	5	6	7	8	

Hammers.
Emmet Hammer Co.....dis 10 %
Maydole's.....new list net
Cheney's.....new list net
Verree.....dis 5 %
Yerks & Plumb.....new advanced list dis 5 @ 10 %
Minot & Co.....dis 15 %

Handles.
Hammer and Hatchet.....dis 10 %
Quakertown, Axe, Pick and Sledge.....dis 10 %
" Hammer and Hatchet.....net
Greensboro', Axe, Pick, Hammer, &c.....dis 10 %
Woolworth Axe, Pick and Sledge.....dis 10 %

Harness Snaps.
Judd's.....dis 40 %
Fitch's.....dis 30 %
Hotchkiss'.....dis 10 %
Andrews'.....dis 25 %
Sargent's, Japanned.....dis 40&10 %
" Tinned.....dis 33½&10 %

Hatchets.
Isaiah Blood.....dis 10 %

Shingling, Nos.	1	2	3.	₩ doz	$7 50	8 00	8 50
Claw, "	1	2	3.	₩ doz	8 50	9 00	9 50
Lathing, "	1	2	3.	₩ doz	7 50	8 00	8 50

Hunt's.....net

Shingling, Nos.	1	2	3.	₩ doz	$7 25	8 00	8 75
Claw, "	1	2	3.	₩ doz	7 75	8 50	9 25
Lathing, "	1	2	3.	₩ doz	7 50	8 25	9 00

Hurd's.....dis 30 %

Shingling, Nos.	1	2	3.	₩ doz	$8 00	8 50	9 00
Claw, "	1	2	3.	₩ doz	9 00	9 50	10 00
Lathing, "	1	2	3.	₩ doz	8 00	8 50	9 00

Newark's Edge Tool Co.'s.....dis 25 %

Shingling, Nos.	1	2	3.	₩ doz	$6 50	7 00	7 50
Claw, "	1	2	3.	₩ doz	7 25	7 75	8 25
Lathing, "	1	2	3.	₩ doz	6 50	7 00	7 50

Yerks & Plumb.....dis 10 %

Shingling, Nos.	1	2	3.	₩ doz	$7 00	7 50	8 00
Claw, "	1	2	3.	₩ doz	7 50	8 00	8 50
Lathing, "	1	2	3.	₩ doz	7 00	7 50	8 00

Stanmon's.....dis 30 %

Shingling, Nos.	0	1	2	3..	₩ doz	$7 50	8 00	8 50	9 00
Claw, "		1	2	3..	₩ doz	9 00	9 50	10 00	
Lathing, "		1	2	3..	₩ doz	8 00	8 50	9 00	
Broad, "		1	2	3..	₩ doz	9 00	10 00	12 00	
" "		4	5	6....	₩ doz	14 00	16 00	18 00	
" "		7	8....		₩ doz	20 00	22 00		

Elephant.....dis 20 %

Shingling, Nos.	1	2	3.	₩ doz	$8 00	8 50	9 00
Claw, "	1	2	3.	₩ doz	9 00	9 50	10 00
Lathing, "	1	2	3.	₩ doz	8 00	8 50	9 00

J. P. Verree & Co.....dis 5 %

Shingling, Nos.	1	2	3.	₩ doz	$7 00	7 50	8 00
Claw, "	1	2	3.	₩ doz	7 50	8 00	8 50
Lathing, "	1	2	3.	₩ doz	7 00	7 50	8 00

Underhill's.....dis 10 %

Shingling, Nos.	1	2	3.	₩ doz	7 25	8 00
Claw, "	1	2	3.	₩ doz	7 75	8 50
Lathing, "	1	2		₩ doz	11 00	12 00

Hinges.
Wrought Strap and T.....dis 30&7½ %
Providence Plate. { 6 and 8 in. list 11c. { dis10&5@10&10 %
Providence Plate. { over 8 in. list 9½c. {
Screw Hook and Strap. { 5 to 12 in. 8½c } net
Screw Hook and Strap. { 14 to 36 in. 7c }
Heavy Welded Hook. { 5 to 12 in.. 9c } dis ..%
Heavy Welded Hook. { 14 in & up, 8½c }
Heavy Welded Hook. { ⅝ to 1 in., 9½c }
Screw Hook and Eye. { ⅜ in. 10½c } net
Screw Hook and Eye. { ⅝ in. 12½c }

Hoes.
Solid Shank, C. S.....₩ doz $8 00—dis 20 @ 30 %
Socket.....₩ doz 9 00—dis 20 @ 30 %
Riveted Eye.....₩ doz 5 00—dis 20 @ 30 %
Grub.....dis 30 %
Planters'—Winsted.....add 10 %
Scovill.....add 33½ %
Scovill Pattern (Winsted).....add 20 %

Hooks.
Belt.....dis 50 %
Bench—Hotchkiss' $5 00 ₩ doz.....dis 10 %
Bench—Weston's No. 1, $8·50; No. 2, $7·00 per doz net
Wardrobe, Japanned.....new lis. dis 10&10 %
Hat and Coat " .....new list dis 15&10 %
Wrought Staples and Hooks and Staples.....dis 60&10 %
Screw Hooks and Eyes, revised list.....dis 70 %

Horse Nails.
Putnam's.

No.	5	6	7	8	9	10
	32c	28c	26c	25c	24c	22c

In lots 2000 lbs. dis. 5 %.
Ansable

No.	5	6	7	8	9	10
	30c	27c	25c	24c	23c	22c

In lots of 1000 lbs. 5 % discount.
Brundage.

No.	5	6	7	8	9	10
	29c	26c	24c	23c	22c	21c

In lots of 500 lbs., dis. 5 %.
American Pressed.

No.	5	6	7	8	9	10
	22c	20c	20c	20c	20c	20c

In lots of 1000 lbs. dis 5 %.
Perkins Finished (ready to drive).

No.	5	6	7	8	9	10
	31c	28c	26c	25c	24c	23c

In lots of 1000 lbs. dis 5 %.
Buffalo Forged.

No.	6	7	8	9	10
	28c	26c	25c	24c	23c

Globe (Pointed and Polished).

No.	5	6	7	8	9	10
	31c	28c	26c	25c	24c	23c

In lots of 1000 lbs., 5 % discount.
National (Pointed and Polished), Extra Finish.

No.	5	6	7	8	9	10
	30c	27c	25c	24c	23c	22c

In lots of 1000 lbs., dis 5 %.
Vulcan (Blued, pointed, ready to drive).

No.	5	6	7	8	9	10
	33c	30c	28c	27c	26c	25c

In lots of 500 lbs., 5 % discount.
" 1000 lbs 7½ % discount.
New London Horse Nails.

No.	6	7	8	9	10
Great Western	27c	25c	24c	23c	22c
U B	29c	27c	26c	25c	24c

In lots of 1000 lbs., dis 5 %.
Star Brand.....₩ ℔ 16c
Morgan.....14c

Horse Shoes.
Burden.....₩ keg, $5 12½
Shoenberger.....₩ keg, 5 12½
R. I. Horse Shoe Co., Perkins Pattern.....₩ keg, 5 1-½
" " R. I. Pattern.....₩ keg, 5 02½
Mule Shoes.....₩ keg, 6 12½

Kettles.
Brass.....₩ ℔ 55c net
In lots of 500 ℔s.....₩ ℔ 50c net

Knives.
Ames' Butcher Knives.....dis 20 %
" Shoe " .....dis 15 %
Hay and Straw, " Wadsworth's".....dis 20 %

Knobs.
Base—Common.....net
" Plush Tip.....dis 10 %
" Elastic End.....reduced list dis 10&10 %

Lanterns.
Brady's Patent.....dis 10 %
Ætna.....dis 10 %
Yankee.....dis 10 %
De Boque.....dis 10 %

Locks and Latches.
Cabinet—Eagle.....dis 25 %
Cabinet—Gaylord.....dis 25 %
Trunk.....dis 10 %
Continental.....dis 15 %
Shepardson's.....dis 20 %
Trenton Lock Co.
Branford.
Norwich.
Russell & Erwin.
Norwalk.
Nashua.
Mallory, Wheeler & Co.
} New list dis 50 %. 2 % extra for cash.

Meat Cutters.
Dixon's (P. S. & W.).....dis 10 %

No.	1	2	3	4
₩ doz.	$14 00	$17 00	$19 00	$20 00

Hales'.....dis 25 %

No.	11	12	13
₩ doz.	$37 00	$33 00	$42 00

Miles Challenge.....dis 20 %

No.	1	2	3
₩ doz.	$22·00	$30·00	$40.00

Perry's Champion (P. S. & W.).....dis 10 %

No.	200	300	400
₩ doz.	$22 00	$27 00	$40 00

Woodruff's (P. S. & W.).....dis 10 %

No.	100	150
₩ doz.	$15 00	$18 00

American.....dis 25 @ 25&5 %

No.	1	2	2½	3	4	5
Each	$6 00	$9 00	$14 00	$15 00	$30 00	$75 00

Molasses Gates.
Stebbins' Pattern.....dis 60&10 %
Tinned ends.....dis 40&10 %
Weed's Patent Self-Boring.....dis 15 %
" without Auger Bit.....dis 40 @ 50 %
Patent Self-Measuring.....per doz $42 00—dis 30 %

Mouse Traps.
Wood Hooker.....₩ doz holes, 16 @ 18c

Nails.—See Trade Report.

Nuts and Washers.
Nuts.....large, 5½c; small, 7½c off list.
Washers.....large, 7c; small, 9c off list.

Oil Stones.
Washita No. 1.....₩ ℔ 22c
" Slips.....₩ ℔ 44c
Hindostan.....₩ ℔ 6c dis 10 %
" Slips.....₩ ℔ 10c dis 10 %

Oilers.
Olmsted's.....dis 25&10 %
Broughton's.....dis 25&5 %
Common Zinc, Brass and Copper.....dis 30 %

Picks.
Washoe R. R....dis 25 %....Nos. 1 2 3 4 5 6
₩ doz.....$14·00 15·00 16·00 17·00 18·00
Washoe Coal, dis 20 %....$8·50 9·00 10·00 11·00 13·00 15·00

Picture Nails and Knobs.
Richards' Patent.....dis 40 @ 40&10 %

Planes.
Chapin's, 1st quality.....dis 30 %
Sandusky Tool Co., 1st quality.....dis 30 %
" " 2d " (Ogontz).....dis 40 %
Ohio Tool Co., 1st quality.....dis 30 %
" " 3d quality (Sciota).....dis 40 %
Owasco Tool Co., 1st quality.....dis 30 %
" " 2d quality.....dis 40 %
Howland's, 1st quality.....dis 50 %
Plane Irons, Butcher's.....$5 50 to £ gold—new list
" Chapin's.....dis 10&10 %
" Ohio Tool Co.....dis 10 %
" Spear & Jackson's.. 5 50 to £ gold—new list
" Sandusky Tool Co.....dis 10 %

Plumbs and Levels
Chapin's.....dis 60&10 %
Standard Rule Co.'s New Adjustable.....dis 50&10 %
Stanley Rule and Level Co.....dis 60&10 %

Pumps.
Douglas Cistern, etc.....new list dis 25 %
" S. & F.....new list dis 20 %

Rakes.
Cast Steel.....dis 30 %

$8 00	9 00	10 00	11 00
9	10	12	14 teeth.

Razor Straps.
Genuine Emerson.....dis 20 %
" " in 5 gross lots.....dis 30 %
Hunt's.....dis 25&10 %
Chapman.....dis 10 @ 15 %

Rivets.
Iron and Tinned.....dis 25 %
Copper Rivets and Burrs.....new list dis 10 %

Rods.
Stan.....new list dis 30 %
American Patent.....dis 30 %

Rope. Manufacturers' List
Manila.....½ inch and larger ₩ ℔ 16½c
" .....⅜ inch ₩ ℔ 17 c
" .....¼ and 5-16 inch ₩ ℔ 17½c
" Lath Yarn.....₩ ℔ 16 c
" Hay Rope.....₩ ℔ 17 c
Sisal.....½ inch and larger ₩ ℔ 15½c
" .....⅜ inch ₩ ℔ 15½c
" .....¼ and 5-16 inch ₩ ℔ 16 c
" Hay Rope.....₩ ℔ 15½c

Sad Irons.
Chapin's Boxwood.....dis 60&10 %
" Ivory.....dis 50&10 %
Hubbard & Curtiss Mfg. Co.....new list net
Stanley Rule and Level Co.'s Ivory.....dis 50&10 %
" " Boxwood.....dis 5 &10 %
Standard Rule Co.'s Boxwood.....dis 60&10 %
" " Ivory.....dis 50&10 %
.....₩ ℔ 4½c net
Sad Iron, Nickel Stand attached.....₩ ℔ 9c

Sand Paper—dis 7½ @ 10 %.....$4 25 ₩ ream
Beader & Adamson's (Flint) 00 to 1½.....$4 25 ₩ ream
" " 2, 2½ & 3.....4 75 "
Assorted.....4 25 "
Star.....₩ ream $3 25
Emery.....₩ ream $6 50 @ 11 50
Cowdin Mfg. Co.....dis 7½ @ 10 %
Diamond Flint, 00 to 1½.....per ream $4 25
" 2, 2½, S and assorted.....4 75
" Emery Paper.....per ream $6 50 to $11 50

Sash Locks.
Clark's.....dis 20 %
Ferguson's.....dis 20 @ 25 %
Norwich.....dis 15 %

Sash Weights.
Solid Eyes.....₩ ℔ 2½c

Sausage Fillers.
Perry's (P. S. & W.).....dis 10 %

No.	1	2
₩ doz.	$15 00	$21 00

Saw Rods.
Saws.....dis 10 %
Spear & Jackson's.....$4 50 to £ gold
John Spear.....$3 60 to £ gold
Am. Saw Co.....new list
Perforated Cross Cuts, all kinds.....68c ₩ foot
Inserted Tooth.....dis 10 %
All else.....dis 12½ %
Disston's.....dis 12½ %
H. W. Peace's Circulars.....dis 10 %
Other kinds.....dis 10 %
Wm. McNiece's Hand, Cross Cut and Circular.....new list dis 10 %
E. M. Boynton's Lightning, dis 30&5 % for immediate cash
" " Others.....dis 15 %

Scales.
Brown's.....dis 25&5 %
Fairbanks'.....new list dis 15 @ 20 %
Howe's.....dis 15&5 %
Shattuck's Counter and Union.....dis 15 %
National Platform.....dis 25 %
Eureka.....dis 25 %
Scale Beams.....dis 25 %
No. 1 300 to 1200 lbs.....90c ₩ cwt
No. 2 " " .....85c ₩ cwt

Screws.
American list of Jan. 1, 1874.
Flat Head Iron.....dis 52½ %
Round Head Iron.....dis 50 %
Flat Head Brass.....dis 52½ %
Round Head Brass.....dis 50 %
Round Head Silver Capped.....new list dis 25 %
Hand Rail.....dis 10 %
Coach or Lag.....dis 30&10 %
Coach, Patent Gimlet Point.....dis 5 %
Bed.....list net
English—Flat Head Iron.....
Machine—Flat Head, Iron.....dis 60 %
" " Brass.....dis 10 %
Round Head, Iron.....dis 55 %
" " Brass.....net

Scythes.
Blood's German Steel, Grass.....₩ doz $9 00
" Cast " " .....₩ doz 10 00
" Silver " " .....₩ doz 11 00
" German " Grain.....₩ doz 13 00
" Cast " " .....₩ doz 14 00
" Red Rover.....12 00
" Young America.....9 50
" Silver Clipper.....12 63
Scythe Snaths.....dis 20 %

Shears.
Cast Steel.....dis 60&10 %
Conn. Cutlery Co., new brand.....dis 60 %
Rowe's.....dis 50&10 %

Shovels and Spades.
Ames.....new list dis 12½ %
Rowland.....new list Feb. 8, '73, dis 20 %
Old Colony.....new list dis 10&5 %
N. B. Sherman.....old list dis 7½ %

Shovels and Tongs.
Iron Head.....list net
Brass Head.....dis 5 %
Polished Steel.....new list dis 15 %

Slates.
Square Frames, Round Cornered, by case.....dis 60&10 %
Less than a case.....dis 50 @ 55 %
Oval Frames, by case.....dis 40 @ 40&10 %
Less than a case.....dis 30 %

Spoons.
Iron.....new advanced list, dis 10 %
By the case.....dis 20 %
Britannia.....dis 40@40&10 %
Plated A 1.....revised list dis 30&5 %
German Silver.....revised list dis 15&5 %
Tinned (P. S. & W.)—
Teas.....$1·50 ₩ gross, net
Tables.....2·75 " net

Stocks and Dies.
.....dis 15 %

Stove Polish.
Gem.....₩ gross $5 00, dis 10 %
Joseph Dixon's.....₩ gross, 6 00
National.....₩ gross $4 75
Gold Medal.....₩ gross $6 00, dis 15 %

Squares.
Steel.....dis 50 %; full cases, dis 50&10 %
Iron.....dis 50 %; full cases, dis 50&10 %
Nickel Plated.....add $2 50 @ $4 00 ₩ doz net
Try Squares and T Bevels.....dis 45&10 %
Star Try Squares and Bevels.....dis 30 %

Tacks.
Full Weight American Iron.....dis 40&7½ %
Half Weight American Iron.....dis 70&7½ %
Carpet.....dis 75 %
Brads American Half Weight.....dis 70&7½ %
Finishing Nails.....⅝ ⅝ ¾ 1 1¼ in. and over
₩ ℔.....25c 20c 18c 14c 13c dis 7½ %
Trunk and Clout.....⅛ ¼ ⅜ ½ 1 1¼

Sheets wider than 30 in. and under 40 in.....46c
" 40 in. and over.....48c
Circular sheets, in diam. from 4 in. to 14 inclusive....45c
" " " over 14 in. to 20 " 49c
" " " 20 in. to 30 " 52c
" " " 30 in. to 40 " 55c
" " " 40 in.....58c

LOW BRASS.

4c ₩ ℔ more than High Brass.
Gilding Metals, 7c ₩ ℔ more than High Brass.
Platers' or Gold Metal { In Bars.....48c / Sawed.....51c

FOR SLITTING: Metal in Width.
2 in. to ¼ in., to No. 30, inclusive, 1c ₩ ℔ advance.
¼ in. to 1 in., thinner than No. 30, 2c ₩ ℔ advance.
2 in. to ½ in., " " 30, 3c " "
¼ in. and less to No. 30, 2c ₩ ℔ advance.
¼ in. and less thinner than No. 30, 5c ₩ ℔ advance.
10 % discount.

SCRAP—NEW METAL.

High Brass Scrap, 18 cents, net.
Low " " 20 " "
Gilding, 22 cents, net.
Turnings, Fillings and Chips, half the price of Scrap net.

BRASS AND COPPER WIRE.
(Stub's Wire Gauge).

	High Brass.	Low Brass.	Gild'g and Cop'r
Nos. 0 to 20	39	43	49
Nos. 21, 22, 23	40	44	50
Nos. 24 and 25	41	45	51

Brass Wire straightened and cut, 4 cents advance
10 % discount

FINE WIRE—NET PRICES.

	High Brass.	Low Brass.	Gild'g and Cop'r.
No. 26	0·41	0·46	0·51
No. 27	0·44	0·48	0·54
No. 28	0·46	0·50	0·56
No. 29	0·48	0·52	0·58
No. 30	0·50	0·54	0·62
No. 31	0·52	0·56	0·66
No. 32	0·56	0·60	0·71
No. 33	0·60	0·64	0·81
No. 34	0·64	0·68	0·91
No. 35	0·69	0·73	1·03
No. 36	0·78	0·84	1·15
No. 37	0·98	0·98	1·28
No. 38	1·28	1·28	1·58

Ten cents per pound extra for Spooling.

TUBING.
(Brown & Sharpe's Gauge.)

₩ ℔
Plain to No. 20, inclusive.....$0·54
Nos. 21, 22, 23, 2c. advance on List for each No.
Nos. 24, 25, 26, 4c. " " "
Above No. 26 special rates.
Plain Tube, 1-4 inch.....70
" 3-16 " 1 55
" 1-8 " 1 80
All Mandrel-Drawn Tubes 5c. advance on List.
Fancy Tubing 4c. advance on List above Plain.
English, Scotch, and Extra Patterns Fancy Tubing to No. 20.....68
Tubing sawed or cut 2 to 4 ft. long, 2c. advance on List.
Add to two cents a half-cent for each additional cutting under two feet. 10 % discount.
BRASS DOOR RAIL Polished—54 cents per lb.—10 %

BELT AND HOSE COPPER RIVETS AND BURS.

Price per ℔	49	50	52	54	56	58	60	64	68c
Nos.	7	8	9	10	11	13	13	14	15

Braziers Rivets, 43 cents per pound discount 10 %.

GERMAN SILVER MARKET METAL AND WIRE.

	Market Metal.	Wire
4 per cent. 12 inch. to No. 26	0·75	0·90
6 " " "	0·85	1·00
10 " " "	1·05	1·25
15 " " "	1·30	1·55
18 " " "	1·45	1·75
20 " " "	1·55	

Discount 10 %.
German Silver Sheets over 12 inches wide and weighing more than 10 lbs.....$2·10 ₩ ℔ net
Advance two cents for each additional inch in width above 12 inches, and two cents per pound on each No. thinner than Nos. 26 to 36, inclusive.
All German Silver thinner than No. 36 is Platers' at 50 cents per pound additional.
German Silver Scrap, one-third less than net price of 12 inch Market Metal; German Silver Turnings, Fillings and Chips, half the price of Scrap.
* Brown & Sharp's Gauge is about two numbers finer than Stubs' Wire Gauge.

COPPER—DUTY: Pig, Bar and Ingot, 5c.; old copper, 4 cents ₩ ℔; Manufactured (including all articles of which copper is a component of chief value) 45 % ad valorem. All subject to a reduction of 10 per cent.
American Ingot.....₩ ℔ 26 @ 26½c
English " .....

SHEATHING, BRAZIERS COPPER, BOLTS, &c.

Braziers Copper, ordinary sizes, over 16 oz., per square foot.....35c ₩ ℔
Braziers' Copper, ordinary sizes, 16 oz. and over 12 oz., per square foot.....38c. "
Braziers Copper, 12 oz. per square foot and lighter.41c. "
Circles less than 8 inch in diameter.....38c. "
Circles, 8 inch diameter and over.....41c. "
Segment and Pattern Sheets.....38c. "
Locomotive Fire Box Sheets.....35c. "
Sheathing Copper, over 12 oz. per sq. ft.....35c. "
" " 12 oz. ₩ sq. ft. and lighter....41c. "
Bolt Copper.....35c. "
No Copper in Sheathing except 14x48 inches, and not to exceed 34 oz. to the square foot.

TINNING.

14x48, by the case.....8c. ₩ sheet
14x48, less than case.....10c. "
Boiler Sizes, 7 and 8 inch.....12c. "
" 9 inch.....15c. "
Other sizes not larger than 30x60.....2½c. ₩ sq.
Larger than 30x60.....5c. "
Copper Bottoms, 36c. ₩ ℔.....net

O'NEILL'S PATENT PLANISHED COPPER.
14x48.
14 and 16 oz. and heavier.....39c. By the case, 38c. ₩ ℔
12 oz. and lighter.....42c. " " 41c. "
Boiler Sizes.
7 in., 14x52. 8 in., 14x56. 9 in., 14x60
14 and 16 oz. and heavier.....41c. By the case, 40c. ₩ ℔
(And all sizes not over 20 inches wide.)
30x60
14 and 16 oz. and heavier.....43c. ₩ ℔
12 oz.....46c. "

LEAD—DUTY: Pig, $2 per 100 lbs.; old Lead, 1½ cent per lb.; Pipe and Sheet, 2½ cents per lb. All subject to a reduction of 10 per cent.
Spanish.....6¾ @ 6¾c gold
German Refined.....6¾ @ 6¾c gold
English.....@ 7¼c gold
Bar.....dis 10 %.....9¼c.
Pipe.....dis 10 %.....10¼c.
Tin Lined Pipe.....dis 10 %.....16¼c.
Sheet.....dis 10 %.....10¼c.
Shot.....dis 10 %. Drop, 11¼c.; Buck, 12¼c.
Solder No. 1, 18c. @ 19c.; No. 2, 17c. @ 17½c.

STEEL—DUTY: Bars, Ingots, Sheets and Coils, valued at 7 cents per lb., or under, 9¼ cents; over 7 cents, and not above 11, 3 cents per lb.; over 11, 3½ cents per lb. and 10 % ad val. Railway Bars 1¼ cents per lb. Railway Bars, in part Steel, 1 cent per lb. All subject to a reduction of 10 per cent. Provided, that Metal cemented, cast or made from Iron by the Bessemer or pneumatic process, of whatever form or description, shall be classed as Steel.

American Cast Steel.

Tool.....16c
Spring.....12½c
Homogeneous.....12½c
Tire.....12½ @ 13½c
Machinery (round and square).....11½ @ 12c
File.....12½c
Sheet.....14 @ 16c
Saw Plate, mill and mulay.....14 @ 16½c
Saw Plate, gang and X cut.....13 @ 14c
" circular as to size.....13 @ 30c

Chrome Steel.

Tool.....₩ ℔ 20 @ 21c
Tool, extra fine.....40 @ 75c
Spring.....₩ ℔ 12c and upward
Machinery.....₩ ℔ 14c.
Hammer.....15c,
Gun or Homogeneous.....16c

English Steel.—payable in gold, dis 5 % cash.

Best Cast.....₩ ℔ 18c
Extra Cast.....19c
Round Machinery, Cast.....11½c
Swaged, Cast.....18c
Best Double Shear.....18c
Blister, 1st quality.....13½c
" 2d quality.....11½c
" 3d quality.....10½c
German Steel, Best.....11½c
do 2d quality.....10½c
Sheet Cast Steel, 1st quality.....18c
" 2d quality.....16c
" 3d quality.....14c
File Steel, Flat and ½ Round.....12½c
" Square and Round.....13c
" Mill.....13½c
" Taper to 4 inch.....17c
" Taper 3 and 3¼ Inch.....18c

SPELTER—DUTY: In Pigs, Bars and Plates, $1 50 per 100 lbs.—less 10 per cent.
Silesian, cash.....7¼ @ 7¾c., gold
American " .....8 @ 11c., currency

TIN—DUTY: Plates, Sheets, Tagger and Terne, 15 per cent. ad val.; Electro-galvanized Plates, 2 cents per ℔; Manufactures of, not enumerated, 35 per cent. ad val.—all subject to a reduction of 10 per cent. Bars, Block and Pigs, free. Banca, subject to duty of 10 per cent.
Banca.....₩ ℔ 33c., gold
Straits.....₩ ℔ 32c., gold
English.....₩ ℔ 27c. gold

CHARCOAL TIN PLATE.

I C 10x14, Prime Charcoal.....12·25
12x12, " .....12·75
14x20, " .....13·00
I X 10x14, " .....14·50
12x12, " .....15·00
14x20, " .....15·50
D C 12½x17 " .....11·75
D X 12½x17 " .....14·00
For each additional X add.....2·25

COKE TIN PLATE.

	Best.	2d Quality.	Ordinary.
I C 10x14	$11·75	10·75	9·75 @ 10·25
I C 12x12	12·25	11·50	
I C 14x20	12·50	11·50	

TERNE PLATE.

	Prime Char.	2d qual.	Coke.
I C 14x20	$11·25	10·25 @ 11·00	8·25 @ 10·25
I X 14x20	13·75		
I C 20x28	24·00	21·50 @ 23·50	19·00 @ 21·50
I X 20x28	28·50	27·50	
I C 20x200 ft.	25·00		

ZINC.—DUTY: Pig or Block, $1 50 per 100 lbs. Sheet, 2½c. ₩ ℔. All subject to a reduction of 10 per cent.
Sheet.....cask 9½c
" .....open 10c

Paper Stock, Old Metals, &c.

(Dealers' Selling Prices.)

Canvas linen.....6 @
" cotton, No. 1.....6½ @ 6¾
" " No. 2.....3 @ 3½
White linen rags, No. 1.....4¾ @
" " No. 2.....4¾ @ 5
Colored.....2¾ @
Mixed woolens.....@ 3
Soft woolens.....@ 6½
Gunny bagging.....1¾ @ 2
Jute Butts.....2¾ @ 2¾
Kentucky bagging.....3½ @ 3¾
Book stock.....4 @ 4½
Waste paper and scraps.....1½ @ 3
Rope cuttings.....1½ @ 3
Kentucky Bale rope.....4 @ 4¼
Oakum junk, No. 1.....5½ @ 5¾
" No. 2.....3½ @ 4
Grass rope.....3¾ @ 4
Tarred Shaking.....1¼ @ 1½

Old Metal.

Copper.....22 @ 23
Yellow metal.....16 @ 17
Brass.....14 @ 15
Heavy Composition.....19 @ 20
Old lead, solid.....6 @
Tea lead.....5½
Wrought iron.....1¾ @ 1½
Sheet iron.....0¾ @
Cast iron.....1 @ 1⅛
Machinery iron.....1¼ @ 1⅜
Zinc.....5½
Pewter, No. 1.....23 @ 25
" No. 2.....10 @ 12
Spelter.....7

New Price List of Iron Wood Screws.

⅛ *Inch.*		1 *Inch.*		2¼ *inch.*	
No. 0,	·34	No. 11,	1·05	No. 15,	2·78
1,	·34	12,	1·13	16,	3·10
2,	·34	13,	1·26	17.	3·31
3/16 *Inch.*		14,	1·39	18,	3·60
No. 1,	·34	15,	1·58	20,	4·12
2,	·34	16,	1·79	22,	5·04
3,	·34	17,	1·97	24,	6·56
4,	·34	18,	2·21	2½ *Inch.*	
5,	·42	20,	3·05	No. 12,	2·34
6,	·49	1¼ *Inch.*		13,	2·55
7,	·60	No. 7,	·92	14,	2·78
8,	·68	8,	1·00	15,	3·10
¼ *Inch.*		9,	1·05	16,	3·31
No. 2,	·34	10,	1·13	17,	3·60
3,	·34	11,	1·21	18,	3·83
4,	·34	12,	1·31	20,	4·44
5,	·42	13,	1·44	22,	5·51
6,	·49	14,	1·60	24,	6·83
7,	·60	15,	1·84	2¾ *Inch.*	
8,	·68	16,	2·10	No. 13,	2·78
9,	·76	17,	2·26	14,	3·07
10,	·81	18,	2·47	15,	3·31
5/16 *Inch.*		20,	3·07	16,	3·60
No. 2,	·36	1⅝ *Inch.*		17,	4·07
3,	·36	No. 8,	1·13	18,	4·38
4,	·38	9,	1·18	20,	5·25
5,	·46	10,	1·23	22,	6·46
6,	·56	11,	1·34	24,	7·74
7,	·65	12,	1·44	3 *Inch.*	
8,	·76	13,	1·60	No. 14,	3·31
9,	·81	14,	1·84	15,	3·60
10,	·87	15.	2·07	16,	4·07
11,	·92	16,	2·31	17,	4·54
12,	·97	17,	2·55	18,	5·04
¾ *Inch.*		18,	2·76	20,	5·99
No. 4,	·40	20,	3·31	22,	7·35
5,	·50	1¾ *Inch.*		24,	8·93
6,	·60	No. 9,	1·37	26,	9·98
7,	·70	10,	1·42	3½ *Inch.*	
8,	·79	11,	1·50	No. 16,	4·04
9,	·84	12,	1·65	17,	5·49
10,	·89	13,	1·84	18,	6·14
11,	·95	14,	2·07	20,	7·53
12,	1·00	15,	2·31	22,	8·74
13,	1·16	16,	2·55	24,	9·69
14,	1·26	17,	2·78	26,	10·63
15,	1·47	18,	3·07	4 *Inch.*	
16,	1·68	20,	3·52	No. 18,	7·25
⅜ *Inch.*		22,	4·07	20,	9·08
No. 5,	·54	24,	4·86	22,	10·24
6,	·63	2 *Inch.*		24,	11·29
7,	·72	No. 10,	1·50	26,	12·60
8,	·81	11,	1·63	4½ *Inch.*	
9,	·87	12,	1·86	No. 18,	8·40
10,	·92	13,	2·07	20,	10·13
11,	1·00	14,	2·31	22,	11·29
12,	1·08	15,	2·55	24,	12·60
13,	1·21	16,	2·78	26,	14·18
14,	1·31	17,	3·07	5 *Inch.*	
15,	1·52	18,	3·31	No. 20,	11·81
16,	1·71	20,	3·83	22,	13·13
1 *Inch.*		22,	4·44	24,	14·18
No. 5,	·61	24,	5·91	26,	15·75
6,	·70	2¼ *Inch.*		6 *Inch.*	
7,	·80	No. 11,	1·86	No. 24,	17·72
8,	·87	12,	2·10	26,	20·34
9,	·92	13,	2·34	28,	23·76
10,	·97	14,	2·55	30,	27·56

Paints, Oils, etc.

Paints.

Black, lamp—Coach Painters.....₩ ℔ 20c
" Ordinary.....16c
" Ivory Drop, fair.....15c
" best.....35c
Black Paint, in oil.....kegs, 8c.; asst'd cans, 11 c
Blue, Prussian, fair to best.....50 @ 75c
" " " in oil.....35 @ 65c
" Chinese, dry.....33c
" Ultamarine.....25 @ 30c
Brown, Spanish.....1½c
" Van Dyke.....9c
Carmine, 40.....$12 00
Green, Chrome.....15 @ 23c
" " in oil.....18 @ 25c
" Paris.....good, 30c; best, 40c
" " in oil.....30c; " 45c
Mineral Paints.....1¼ @ 4c
Orange Mineral.....14½c
Red Lead, American.....9¼c
" English.....10½c
" Venetian (N. C.) dry.....2¼c
" " in oil.....asst'd cans, 11c; kegs, 8½c
" Indian, dry.....10c
Rose Pink.....13c
Sienna, American, Raw.....4c
" Burnt.....4½c
" " in oil.....16 @ 20c
" Raw.....15 @ 25c
Umber, Burnt.....4 @ 8c
" " in oil.....16 @ 21c
" Raw.....3½ @ 7½c
" " in oil.....16 @ 22c
Vermillion, Chinese.....$1 62
" English.....1 52
" Trieste.....1 45
" American, Common.....23c
White Lead, American, pure dry.....10½c
" " " in oil.....11½c
White, Paris, English, prime.....in bbls. 2½ @ 2¾c
Yellow Ochre French.....2½ @ 2¾c
" " in oil....asst'd cans, 11c; kegs, 8½c
" Vermont.....in casks 1½c
" Chrome.....17 @ 21c
" " in oil.....18 @ 22c
Zinc White, American No. 1 dry.....9c
" " 1, in oil.....11c
" French (Paris).....11 c
" " in oil.....12 c

Oils.

Linseed Raw.....₩ gal. casks, 97c. bbls. 98c.
" Boiled.....$1·02 " $1·03
Whale, Crude.....
" Bleached Winter.....
Sperm, Crude....." 1·50
" Winter unbleached....." 1.70
" " Bleached....." 1·75
Seal, Extra Refined.....
Lard, Pure Winter....." 92c
" Spring.....
Cotton Seed, Crude....." 42½c
" Southern Yellow.....46½c @ 47½c
" White.....
Neatsfoot, Winter.....70c @ $1·10
Natural Lubricating.....38c @ 40c

Sundries.

Asphaltum.....9c
Benzine.....₩ gal. 18c
Chalk.....1¾c
" Block.....
Dryer, Patent, Am'n.....asst'd cans, 10½c.; kegs, 9c
" " English.....11c.; " 9c
Flocks.....
Frostings.....50c
Glue, White.....38 @ 47c
" Sheet.....30c
Glaziers' Points, Zinc.....9c
Gum, Copal.....36c
" Damar.....25c
" Shellac, English.....60c
" " dark.....56c
Litnarge.....10c
Pumice Stone, selected Lumps.....4 @ 6c
" " powdered.....4c
Putty in bladders.....3½c
" in bulk.....3c
Rotton Stone, soft, English.....8c
Spirits Turpentine.....49c
Whiting, Spanish.....1c

Glass.

French Window—1st, 2d, 3d, and 4th qualities. Per box of 50 feet.

SINGLE.

SIZES.	I.	II.	III.	IV.
6 x 8 to 7 x 9	$8·00	$7·00	$6·75	$6·00
8 x 10 to 10 x 14	8·50	8·00	7·25	6·50
10 x 15 to 12 x 16	9·00	8·50	8·00	6·75
13 x 16 to 16 x 30	9·50	9·00	8·50	7·75
15 x 22 to 15 x 30	11·75	10·50	10·00	8·00
16 x 30 to 22 x 30	14·25	12·25	11·00	9·50
15 x 38 to 22 x 36	15·00	13·50	12·00	
24 x 36 to 24 x 40	15·75	14·25	12·50	
28 x 38 to 28 x 42	16·25	14·75	13·25	
28 x 44 to 28 x 50	17·25	15·75	14·25	
30 x 50 to 30 x 54	20·50	17·00	15·50	
32 x 54 to 34 x 56	21·50	19·25	17·50	
34 x 58 to 34 x 60	23·00	21·50	20·25	
36 x 60 to 40 x 60	26·50	24·25	23·00	

DOUBLE.

SIZES.	I.	II.	III.	IV.
6 x 8 to 7 x 9	$13·00	$12·00	$11·50	$10·00
8 x 10 to 10 x 14	14·00	12·75	12·00	10·75
10 x 15 to 12 x 16	15·00	14·00	13·25	11·25
13 x 16 to 16 x 20	16·00	15·00	14·00	12·50
15 x 22 to 15 x 30	20·00	17·50	16·50	13·25
16 x 30 to 22 x 30	22·00	19·25	17·75	15·00
15 x 38 to 22 x 36	23·75	20·50	19·25	
24 x 36 to 24 x 40	24·75	22·50	20·00	
28 x 38 to 28 x 42	26·00	23·50	21·00	
28 x 44 to 28 x 50	27·50	25·50	22·50	
30 x 50 to 30 x 54	31·00	26·50	24·00	
32 x 54 to 34 x 56	32·50	29·00	26·50	
34 x 58 to 34 x 60	34·50	33·00	31·00	
36 x 60 to 40 x 60	39·50	36·50	35·00	

Sizes above—$12·00 per box extra for every 5 inches.
Discount to the trade, 50&10 to 50, 10&5 per cent.
An additional 10 per cent. will be charged for all Glass more than 40 inches wide. All sizes above 52 inches in length, and not making more than 81 united inches, will be charged in the 84 united inches bracket.

A. C. Downing & Comp'y,

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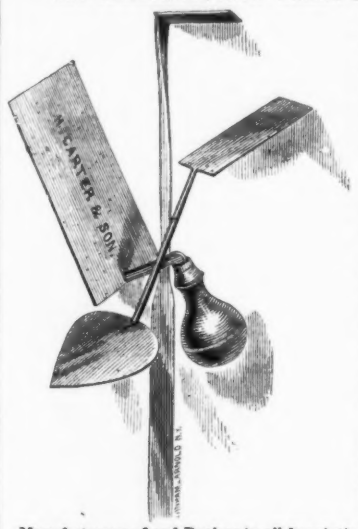
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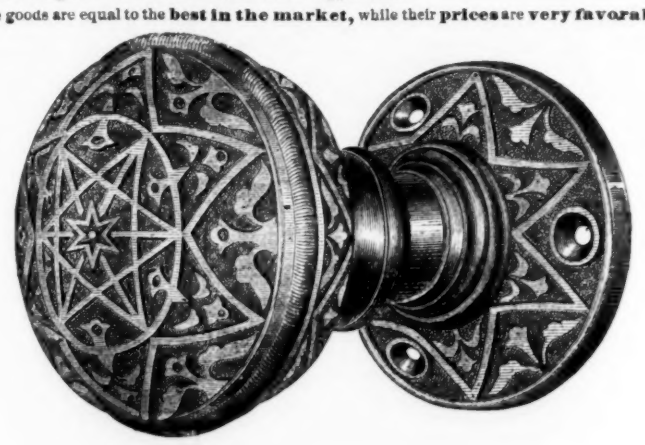
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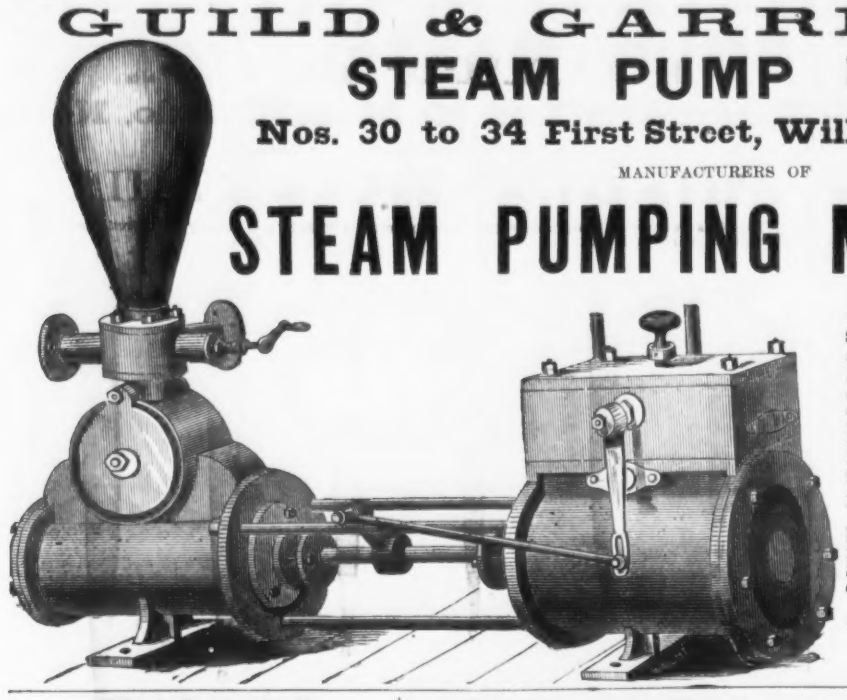
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The subscriber will sell exclusive rights, for separate States, to manufacture Wrought Iron and Steel by his patent processes, and take payment in part interest in the business, and will erect Blast furnaces and Wrought Iron and Steel works when required (for manufacturing by his processes), upon the most approved models in this country and Europe.

These processes produce "*from ordinary coke pig iron the purest iron ever made*," and which is equal to the highest class Swedish and Norwegian Irons for Cast Steel and tools, and to Low Moor Iron for engineering purposes, and at *less than one-half the cost* of those irons.

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J. BLODGET BRITTON.

This Laboratory was established in 1866, at the instance of a number of practical Iron-masters, expressly to afford prompt and reliable information upon the chemical composition of the substances above mentioned, for smelting and refining purposes. The object being to make it at once a convenient, practically useful, and comparatively inexpensive adjunct to the Furnace, Forge and Rolling Mill.

CHARGES TO IRON WORKS.

For determining the per cent. of pure Iron in an ordinary Ore	$4 00
For the per cent. of Pure Iron, Sulphur and Phosphorus in do	12 50
For each additional constituent of usual occurrence	1 50
For those of unusual occurrence or difficult to determine, the charge must necessarily depend upon circumstances.	
For determining the per cent. of Sulphur and Phosphorus in Iron or Steel	12
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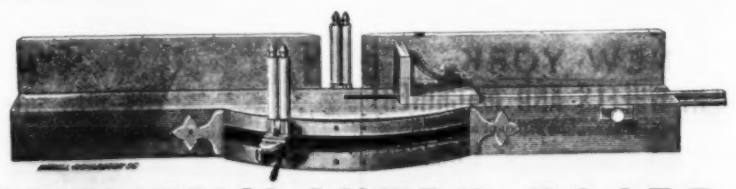
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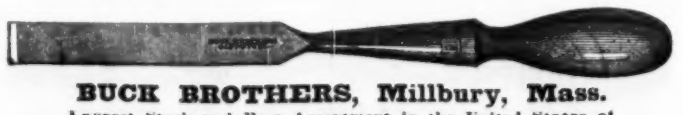


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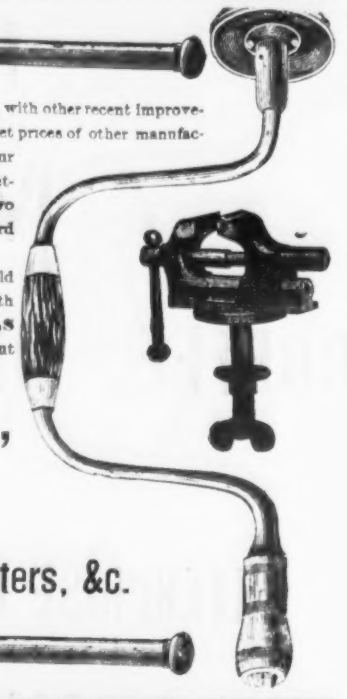
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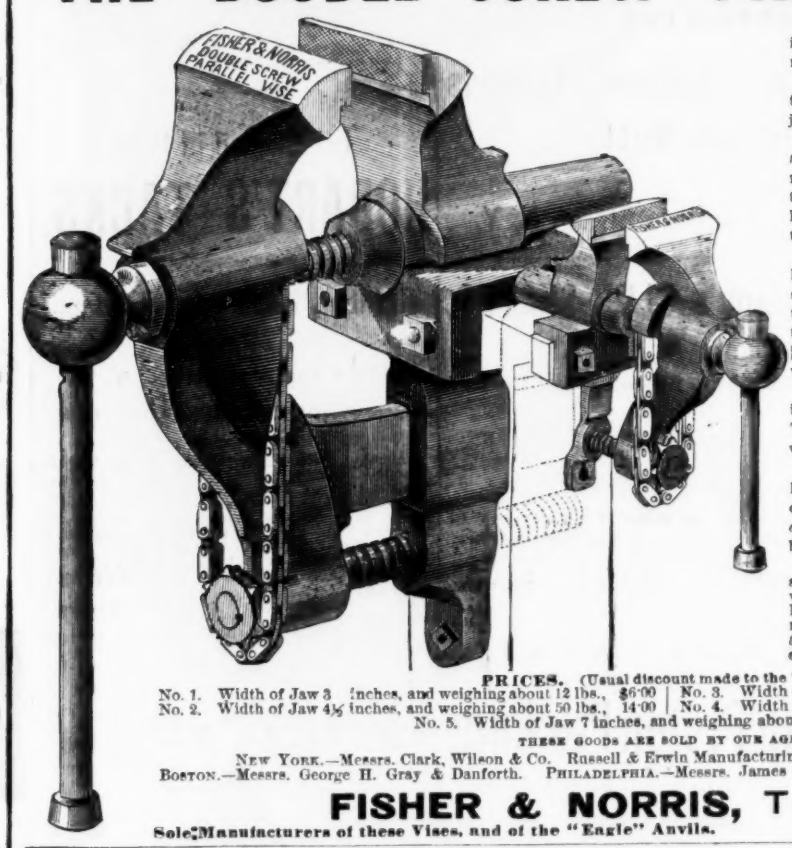
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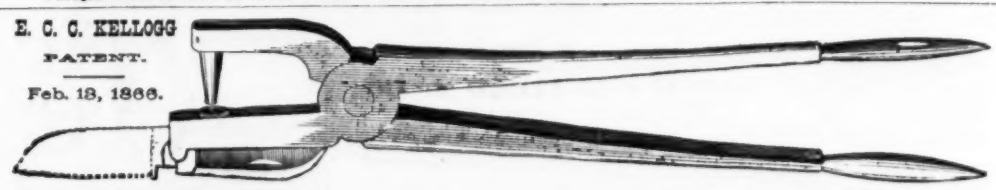
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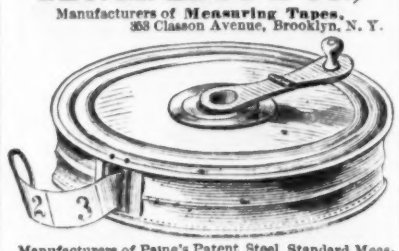
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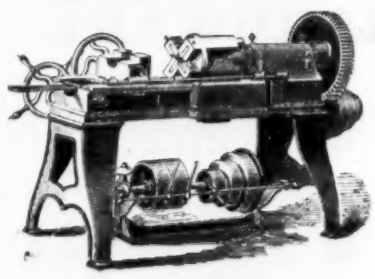
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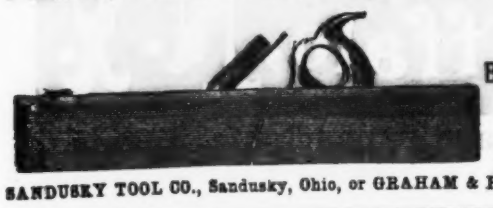
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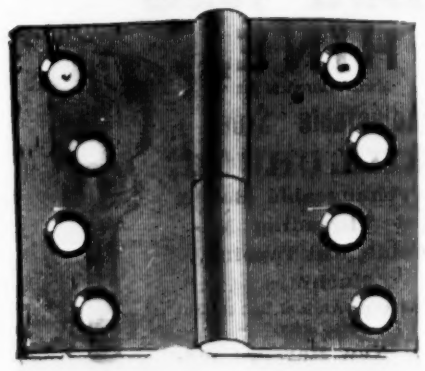
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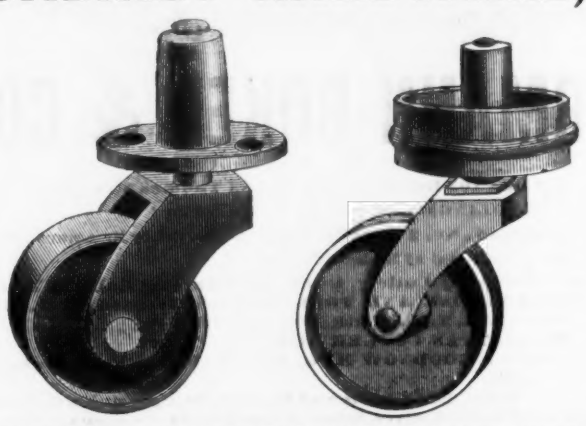
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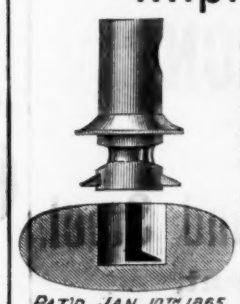
MANUFACTURERS OF

CABINET HARDWARE,



Japanned and Coppered Iron Bed and Plate Casters, Brass Shallow and Deep Socket Casters; also, Bracket Bed and Truck Casters, with Iron, Brass, Porcelain and Wood Wheels.

Improved Door Knobs.



On the 10th January, 1865, we obtained Letters Patent for improved method of securing necks to Mineral and Porcelain Door Knobs, which improvement was used by us long enough to prove its utility, but on account of unsettled claim of joint ownership by former partner, its use was discontinued. Having now made a further improvement, for which we have made application for a Patent, we are now making the **BEST SECURED** and **MOST DURABLE** Mineral and Porcelain Door Knobs ever offered in this or other markets.

We solicit orders for these Knobs at our regular prices for old styles, with the understanding that if any can be loosened from or gotten off the necks without breaking the tops, they may be held by the purchaser subject to our order, with expenses added.

See *The Iron Age*, of August 21st,, page 11, for reduced list prices on Locks and Latches; also, for illustrated description of our patent **Telescope Locks and Latches,** with patent Flat **Steel Perforated Keys,**

Address

BRANFORD LOCK WORKS,

Branford Conn.

Or THE HART, BLIVEN & MEAD MANUFACTURING CO., Agents,

18 & 20 Cliff and 243 & 245 Pearl Streets, New York.

"Easily Applied and not Liable to get out of Order."—From Report of Judges at American Institute Fair, 1873.



The Challenge Door Spring Co.,

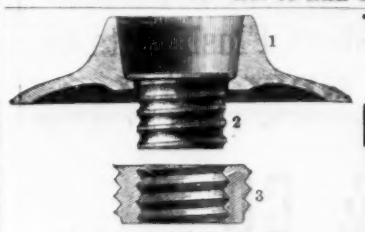
Patented] Exclusive Manufacturers of the [March 4, 1873.



In Appearance the Most Beautiful. In Action the Most Graceful. In Use the Most Reliable.

The Challenge Springs are manufactured from **Steel Wire, tempered by an Improved Process,** the result of repeated experiments, and must [illegible] made from common Bed Spring Wire.

No. 49 Ann Street, NEW YORK.



PATENT DOOR-KNOB ROSETTE.

No. 1, Rosette.
No. 2, Screw entering No. 3.
No. 3, Stationary bushing remaining firmly in door.

The Wethersfield Novelty Co.

MANUFACTURERS OF

Builders' Hardware and Plated Goods.

BRASS AND IRON FOUNDERS.

Particular attention given to Light Manufacturing for outside parties; also,

BRASS & IRON FOUNDING, SILVER & NICKEL PLATING. Orders Solicited.

We would call the particular attention of the trade to our **PATENT IMPROVED ROSETTE** for Door Knobs. This Rosette does away with the small screws and *cannot* work loose. It can be applied four to one faster than any others. Can be applied to old doors.

Factory on the Valley R. R. at Wethersfield, Conn.

Communication from Hartford (2 miles), by horse or steam cars.

PHILADELPHIA.

(Corrected weekly by Lloyd, Supplee & Walton).

Terms, 30 days. For 60 or 90 days, interest added at 10 per cent. per annum.

Anvils.—Solid Cast Steel.....₱ ℔ 14c
Peter Wright's.....₱ ℔, gold, 12½c
Wilkinson's.....11½c
Eagle.....11 cents currency—dis 15 @ 15&5 %
Apple Parers.—Reading Improved.....per doz $8 50
Victor, Improved..... " 8 25
Union, " ..... " 8 00
Turn Table, " ..... " 8 50
Discount for 25 dozen lots..... " 50c
Axes.—Mann's Light.....Per doz. $13 00 @ 14 00
Hunt's Light..... " 14 00 @ 14 50
Red Indian, all sizes..... " 12 50 @ 12 00
Red Chieftain, all sizes..... " 12 50 @ 13 00
Crown Prince..... " 13 50 @ 13 00
Augers and Auger Bits.—Pierce's Pat.
Twist Bits.....dis 25 %
Bates' & Ives' Bits.....dis 30&10 %
Douglass' Bits.....dis 30 @ 30&5 %
Hamden Auger Bits.....dis 20&10 %
Cook's Bits.....dis30 @ 30&10 %
Bonney's Pat. Hollow Augers.....dis 25 %
Russell Jennings' Bits.....dis 10 %
Bates' & Ives Nut Augers.....dis 30 @ 30&5 %
Douglass Nut Augers.....dis 30 @ 30&5 %
Watrous' Ship Augers.....dis 10 %
Balances.—Landers Frary & Clark's.....dis 15 %
Chatfillon's.....dis 15 %
Morton's.....dis 15 %
Common Spring, with Hook.....₱ doz $1 38 @ 2 00
Bells.—Bevin Bros. Mfg Co. Full Weight Hand Bells.....dis 50&10 @ 60 %
Bevin Bros. Mfg. Co., Extra Light Hand Bells.....dis 60 @ 60&10 %
Other makers light.....dis 60&10 %
Connell's Door Bells.....dis 50 %
Western and Kentucky, Cow.....dis 50 %
Boring Machines.—Bates' Mfg. Co., complete with augers.....dis 15 @ 20 %
Douglass' Mfg. Co., complete with augers..dis 15 @ 20 %
Common Boring Machines, no Augers.....$4 25 @ 4 00
Angular, " " ..... 5 25 @ 5 00
Bolts.—Eastern Carriage Bolts.....dis 70&10 %
Western " " .....dis 70&10 %
Philadelphia " " .....dis 50 @ 50&5 %
Wrought Shutter Bolts.....dis 45 @ 50 %
Cast " " .....dis 30&10 %
Skelly's Phila. Norway iron, finish. points....dis 50&5 %
Braces.—Barber's.....dis 40 %
Backus.....dis 40&10 %
Bartholomew's American Ball.....dis 10&10 %
Spottars.....dis 40 %
Butts.—Cast Fast Joint, Narrow.....dis 40 %
" " " Broad.....dis 40 %
Cast Loose Joint.....dis 50 %
" Acorn, Loose Pin.....dis 40&10 %
Wrought Loose Pin.....dis 35&7½ %
" Table Hinges and Back Flaps....dis 30&7½ %
" Narrow.....dis 30&7½ %
" Loose Joint.....dis 35&7½ %
Parker's Blind Butts.....dis 40 %; by the case, dis 40&10 %
Shepard's " " .....
Clark's " " .....
Sargeatson's " " .....dis 45 %; by the case, dis 50 %
Lill & Porter's " " .....dis 25&10 %
Chains.—German Halter.....new gold list dis 10 %
" Coil.....new gold list dis 10 %
Galvanized Pump.....₱ ℔ 15c
Best Proof Coil Chain—

₱ ℔.....	13¾	10¾	10	9½	9¼	9	8½c gold
	5-16	¼	5-16	⅜	7-16	½	⅜ in.

By the cask, 560 lbs., discount ½c per lb. Common Chain, ½c per lb. less than proof.
Chisels.—Socket Framing.....dis 60 @ 60&10 %
Socket Firmer.....dis 60 @ 60&10 %
Tang " .....dis 40 @ 40&10 %
Beare's Framing and Firmer.....dis 10 @ 15 %
Casters.—Porcelain Wheel.....dis 25&10 %
Iron.....dis 25&10 %
Brass.....dis 25&10 %
Clothes Wringers.—Universal..... per doz $72 00
Novelty..... " 72 00
Reliance..... " 72 00
Providence..... " 72 00
Orders for 5 dozen, discount $3 per dozen.
King Wringers (Iron Frame).....per doz $68 00
Coffee Mills.—Common Box and Side.....dis 10 @ 15 %
Patent Box and Side.....dis 10 @ 15 %
Cutlery.—American Pocket (best).....dis 25 %
Landers, Frary & Clark, J. Russell & Co. and Lamson & Goodnow Mfg. Co. Manufacturers' net prices.
Drawing Knives.—Hart Mfg. Co.'s ..dis 60 @ 60&10 %
Concave Adjustable Handle.....dis 10 %
Beatty.....dis 10 @ 15 %
Fry Pans.
Tinned.....dis 20 %

₱ doz..	$3 00	3 25	3 62	4 00	4 50	5 00	5 50	6 00	7 50
No....	0	1	2	3	4	5	6	7	8

Burnished.

₱ doz..	$2 80	3 00	3 38	3 75	4 12	4 50	5 00	5 62	6 25
No....	0	1	2	3	4	5	6	7	8

Files.
Nicholson Mill Files.... new list, $5 00 to £ cur dis 10 %
" Bastard..... " 5 00 to £ cur dis 10 %
" Taper..... " 5 00 to £ cur dis 10 %
Butcher's Mill.....$5 75 to £ gold
" Bastard..... 5 50 to £ gold
" Taper..... 5 50 to £ gold
Moss & Gamble—Mill, Taper and Bastard.....5 50 @ 5 25 to £ gold
Fluting Machines.
Royal, No. 1, 4½ inch Rollers.....list $6 00
" No. 2, 6 " " .....list 7 00
Hammers.
Yerkes & Plumb's.....dis 10 %
Hammond & Son's.....dis 5 %
Veree.....dis 5 %
Hatchets.
Beatty's.....dis 10 @ 15 %
Shingling and Half. { ₱ doz...$7 00 7 50 7 75 8 00 / No..... 1 2 3
Yerkes & Plumb.....dis 10 %
Shingling and Half. { ₱ doz...$7 00 7 50 8 00 8 50 / No..... 1 2 3 4
Claw.... { ₱ doz.....$7 50 8 00 8 50 / No..... 1 2 3
Hinges.—Strap and T.....dis 30&7½ %
Bonney's No. 1 Gate.....dis 25 %
" No. 2 and 3.....dis 35 %
Horse Nails.

	Nos.	6	7	8	9	10
Ausable		27	25	24	23	22
Globe		28	26	25	24	23
Brundage		26	24	23	22	21
	Nos.	5	6	7	8	9	10
Putnam		32	28	26	25	24	22

On Ausable, Globe and Brundage 1000 ₱ lots....dis 5 %
Knobs.—Door, Mortise and Rim.
Makes in Combination.....dis 30 %
Extra discount for cash 2 %
Porcelain and Mineral.....dis 20 %
Locks and Latches.—Rim and Mortise.....dis 50 %
Extra discount for cash 2 %
Till and Cupboard.....dis 25 %
American Padlocks.....dis 50 %
Scandinavian Pad Locks.

₱ doz.....	$10 50	10 50	12 00	12 00	15 00	15 00	dis 15 %
No.....	9	9½	10	10½	11	11½	
₱ doz.....	$18 00		18 00		22 00	22 00	dis 15 %
No.....	12		12½		13	13½	

Trunk Locks.....dis 5 @ 10 %
Thumb and Roggens Latches.....dis 25 %
Lanterns.—Square Candle and Oil.....dis 10 %
Globe for Oil.....dis 10 %
" " Kerosene.....dis 10 %
Tubular Lanterns.....dis 10 %
Matrocks.—Long and Short Cutter.....dis 25 %
Western Pattern.....dis 25 %
Pennsylvania Pattern.....dis 15 %
Molasses Gates.
Enterprise Mfg. Co.'s Measuring Faucets.....dis 20 %
Stebbins' Gates.....dis 60 @ 60&10 %
Lincoln's " .....dis 40 @ 40&10 %
Landers, Frary & Clark's Petroleum.....dis 10 @ 10&10 %
Taylor's Petroleum Faucets.....dis 20 @ 20&10 %
Brass Liquor Cocks.....dis 20&10 %
Meat Cutters.—Dixon's.....dis 10 %
Woodruff.....dis 10 %
Stowe.....dis 10 %
Hale's.....dis 10 %
Stuffers.....dis 25 %
Planes.—Auburn Tool Co., " Benea ".....dis 30 %
Taber Plane Co., "Bench".....dis 30&10 %
Metallic Plane Co.....dis 25&5 %
Evans Pat. Circular.....net
Plane Irons.—American.....list net
Butcher's.....gold £, $5 50
Picks.—Philadelphia.....net
Pittsburgh.....net
Plumbs and Levels.
Stanley Rule and Level Co.....dis 60 @ 60&10 %
Wm. Johnson, (Stanley List).....dis 60 @ 60&10 %
Rakes.—Cast Steel Garden.....dis 33⅓ %
Malleable Garden.....dis 33⅓ %
Wood Head Iron Teeth.....dis 30 @ 40 %
Rules.—Stanley Rule and Level Co.....dis 60 @ 60&10 %
Steven's and Hubbard's.....dis 60 @ 60&10 %
Steelyards.—American Pattern.....dis 15 %

₱ doz..	$5 50	7 00	9 00	10 00	11 00	12 00
No....	50	100	150	200	250	300

English Pattern.....dis 15 %

₱ doz..	$7 00	8 67	10 67	12 67	14 67	16 67
No....	50	100	150	200	250	300

L. F. & C. Excelsior.....dis 10 %

₱ doz..	$9 00	10 00	12 00	15 00	18 00	21 00
No....	50	100	150	200	250	300

Scythes.—Golden Clipper, Damascus Blade, Boxed and Sharpened.....₱ doz. $11 00 net
Clipper No. 10, Boxed and Sharpened.....₱ doz $10 50
" " 5, " " " 10 00
Common Scythes.....₱ doz $7 00 @ 10 00
Squares.—Steel and Iron, new list.....dis 50 %
Disston's Cross Cut.....dis 12½ %
Disston's Hand.....dis 12½ %
W. McNiece's H'd, Cross-Cut & Circ'r, new list..dis 15 %
Boynton's Lightning, new list.....dis 30 %
Shovels and Spades.
Rowland's Plain Back, list Feb. 1873.....dis 20&10 %
" Back Strap " .....dis 20&10 %
Oliver Ames & Sons.....new list dis 12½ %
Ready Shovel Co.....dis 12½&5 %
Sad Irons.—Richmond (polished face).....per lb. 4½c.
Coquanock (polished face)..... " 4½c.
Stone.—Arkansas Oil, No. 1.....₱ ℔ $1 75
Turkey Oil, No. 1..... " 1 00
Washita Extra..... " 30c
" No. 1..... " 22c
" " 2..... " 18c
Hindostan 8 in..... " 5½c
" Axe..... " 7c
Screws.—Iron.....new list, Jan. 1st, 1874, dis 32½ %
Brass.....dis 5½ %

Spoons.—
Plated Spoons, Rogers Bros.'...new list dis 30 @ 30&5 %
Britannia, Spoons.....dis 40 @ 40&5 %
German Silver.....new list dis 10 @ 15 %
" Light.....new list dis 15&5 %
Lalance & Grosjean Iron.....dis 10 %
Springs.—Gray's Door.....dis 40 %
Torry's Door.....dis 40 %
Stocks and Dies......dis 15 %
Stove Polish.—Gem.....₱ gross, $5 00
Onyx..... " $5 00
Try Squares.—Winterbottom.....dis 10 @ 15 %
Stanley Rule and Level Co.....dis 45&10 %
Willis Thrall, No. 2.....dis 30&10 %
Disston's No. 2.....dis 40 %
Tacks, &c.—Half Weight Tacks.....dis 20 %
" " by the case.....dis 70&7½ %
Clout and Finishing Nails.....7½ %
" " " by the case.....dis 75&7½ %
Traps.—Genuine Oneida—Newhouse list.....dis 20 %
Imitation " " " .....dis 30 %
Vises.—Solid Box.....₱ ℔ net 15c
Wrenches.—Coes Genuine.....dis 30&10 @ 40 %
Coes Imitation Wrought Bar.....dis 45 @ 45&5 %
" " Malleable Bar.....dis 50 @ 50&5 %
" " (Kellogg) Malleable Bar.....dis 50 @ 10 %
Tafts Pattern.....60&10 %
" " Kellogg's.....dis 60&10&5 %
Philadelphia Tool Co.'s Pat. Duplex.....dis 25 %
" " " Improved Baxter.....dis 25 %
" " " Adjustable Fork.....dis 25 %
Wire.—No. 0 to 18.....dis 35 @ 37½ %
No. 19 to 26.....dis 40 @ 42½ %
No. 27 to 36.....dis 45 @ 47½ %
Coppered 0 to 12.....dis 15 @ 20 %
Tinned Broom Wire.....dis 20 %

BUFFALO.

Reported by Messrs. Sidney Shepard & Co.

Feb 1, 1874.

Augers—C. S. Cut, French, Swift & Co.....dis 30&10 %
Bits, Auger—Pierce's.....dis 30 %
Snell Mfg. Co.....dis 30 %
Jennings.....dis 10 %
Bells, Cow—Yaw's Genuine.....dis 25 %
Bellows—Smiths'.....dis 20 %
Bolts—Carriage and Tire, Square Neck.....dis 70&10 %
Diamond Neck.....70&10&10 %
Braces—Bit, Spofford's Patent.....dis 40 %
Brads, Cut.....dis 50&7½ %
Boards—Stove, Brooks' Patent.....dis 30 %
Butts—Brass.....dis 20 %
Cast Loose Joint.....dis 50 %
" " Pin.....dis 45 %
" " " Japanned.....dis 45 %
" " " Silver Tipped.....dis 25 %
Wrought Narrow.....dis 30&7½ %
" Broad, Loose Joint.....dis 35&7½ %
" Table and Back Flaps.....dis 30&7½ %
Wrought Butts, Loose Pin.....dis 35&7½ %
Belting—Rubber.....dis 30 @ 30&5 %
Leather new list.....dis 30 @ 30&5 %
Beaters, Egg, "Peerless".....per doz $4 00
Brick—Bath (box of 2 doz) Best English.....$1 50
" Rutherford".....$1 25
Bung Borers—" Enterprise".....dis 30 %
Chalk—White, Carpenter's.....₱ gross, 50c
Red, Carpenter's..... " 75c
Blue, " ..... " 90c
Chisels—Firmer Socket.....dis 60&10 %
Framing Socket.....dis 60&10 %
Corner Socket Chisels.....dis 60&10 %
Slick's Carpenters'.....dis 60&10 %
Castings—Malleable.....₱ ℔ 10½c
Cherry Seeders.....per doz $12 00
Elbows—Corrugated.....

	5	5½	6	7	
Charcoal	$4 25	5 25	5 25	6 50	dis 15 %
Russia	10 00	13 00	13 00	14 00	

Files—Wheeler, Madden & Clemson's.....dis 45 %
Freezers, Ice Cream—" Champion".....dis 33⅓ %
Gates—Molasses—
Patent Self-Measuring.....₱ doz., $42 00; dis 20 %
Hinges—Window Blind—
Clark's No. 20.....$1 50 per doz net
Shepard's Standard, and Clark's.....dis 40&10 %
Wrought Strap and T.....dis 30&7½ %
Hods, Coal—Plain, Black and Galvanized.....dis 10 %
Funnel, Black and Galvanized.....dis 10 %
Fancy and Helmet.....dis 10 %
Palace Coal Vases.....net
Hammers—Maydole's.....net
Yerkes & Plumb's.....dis 5 @ 10 %
Hooks and Staples—Wrought.....dis 60&10 %
Hooks—Belt.....dis 50 %
Hasps and Staples—Wrought.....dis 60&10 %
Sad Irons.....4¾c
Kettles—Brass.....₱ ℔, 50 @ 55c
Enameled.....dis 5 %
Knives, Drawing—Oval No. 1.....dis 60&10 %
Razor Blade.....dis 50&10 %
Lanterns "Peerless," No. 1 5 10

	₱ doz $26 00	$11 25	$13 75	dis 10 %
Gem, with guards				$6 50
Tubular				11 50
" with Guards				12 00

Machines—Apple Paring, "Reading"..$6 00 @ 8 50 ₱ doz
Mills, Coffee—Box and Slide, common.....dis 15 %
Box Union and Eagle.....dis 15 %
" Enterprise".....dis 20 %
Nails—Clout and Finishing.....dis 7½ %
Shoe.....dis 7½ %
Horse, Ausable.....No. 5 6 7

	30	27	25	24	25	22c
" " Finished & Pointed	add 1c ₱ ℔					
" " 1000 lbs.	dis 5 %					

" Clinton.....No. 6 7 8 9 10

	22	20	19	18	17c

Packing—Rubber.....dis 30 @ 30&5 %
Pencils, Slate—Soapstone.....4 5 6in.

	30	40	50c. ₱ 100

Case lots.....dis 20 %
Paint—White Lead, U. S. Gov't.....₱ ℔ 9 c
Rivets—Iron, Black and Tinned.....dis 20 @ 25 %
Copper.....dis 10 %
Rope—Manila, ½ inch and larger.....₱ ℔ 15½c
Rules—Boxwood and Ivory, Stephens.....dis 60 %
Screws—"American Screw Co"—
Flat Head, Iron.....dis 52½ %
Flat Head, Brass.....dis 52½ %
Staples—Blind, Boardman's Pat., ½ & ⅝.....₱ ℔ 37c
Skates—White's.....a.s 25 "
Barney & Berry's—N. Y. Club Japanned Top.....$2 20
" " B. & B. Club Blued Top..... 2 85
Straps, Skate—Russet and Black.....dis 25 %
Spoons, Iron Tinned.....dis 10 %
" " by the case.....dis 20 %
Plated Rogers' A No. 1.....dis 30&5 %
Britannia.....dis 40 %
Squares—Steel and Iron.....new list 50 %
Shoes, Horse—H. Burden & Sons.....₱ keg $5 50
Shovels & Spades—Shepard, Forsyth & Dennison..dis 20 %
Saws—Henry Disston & Sons.....dis 10 %
Scales—Buffalo Scale Works.....dis 25 %
Fairbanks.....dis 15 %
Shears—Seymour's.....dis 60 %
Trans, Steel—Newhouse.....dis 20 %
Tacks—Half Weight Am. Iron.....dis 70&7½ %
Vises—Parallel, Buffalo.....dis 15 %
Wrenches—Coes' genuine.....dis 40 %
Coes' Imitation.....dis 50&10 %
Tafts' Pattern.....dis 65&10 %
Ware—French, Tinned and Iron.....dis 30
Stamped and Japanned.....net
Cast Iron Hollow.....dis 25 %
Tin Plates.—Add for each X.....2 50
10x14, I.C. Charcoal...$12 50 14x20 C. terne...11 75 @ 12 00
12x12, " ... 12 00 20x28 C. " ... 25 00
12½x17, " ... 12 00 20x28 X. " ... 29 50
14x20, " ... 13 50
Pig Tin—Straits.....34c @ 35
Bar Tin.....36c
Solder.....No. 1, 20 c; No. 2, 18 c
Sheet Zinc—
"Lasalle".....570 ℔ casks
$10 00 10 50 ₱ 100 ℔s
Sheets.....$10 00
Iron Wire—Bright and Annealed.....dis 33⅓ %
Coppered.....dis 27½ %
Tinned.....dis 15 %

Tinned Broom, { Nos.	20	21	22	....dis 20 %
	20c	21c	21c	

Copper—Sheathing 14 @ 18 oz.....₱ ℔ 35c
Planished.....₱ ℔ 39 @ 41c
Bottoms.....₱ ℔ 36c
Bolts.....₱ ℔ 35c
Braziers' Sheets.....₱ ℔ 37c
Sheet Iron.—
18 Common.....$5 30
24 Common.....5 50
24 W. D. Wood & Co., Smooth Finish.....6 10
Am. Russia.....A. B.
14c 11c
Gen. Russia, No. 1 stained.....19c
" " clean.....20c
Galvanized.....dis 10 %

PITTSBURGH.

Card Rates, 60 days.

Flat Bar.—
1¼ to 4 x ⅜ to 1 inch..3·3c
4¼ to 6 x ⅜ to 1 inch..3·5c
1¼ to 6 x 1¼ to 1½ in..3·7c
Horse Shoes.—
All sizes.....4·8c
Heavy Bands.—
3½ to 6 x ½ & 5-16 in..3·9c
1¼ to 3¼ x ¼ & 5-16 in..4·0c
Light Bands.—
3 to 6 x 3-16 to No. 12..4·3c
1¼ to 2¾ x 3-16 to No. 12..
Hoops.—2¼ to 3 in....4·6c
3½ to 4¼ in....4·8c
1¼ to 2 in....4·8c
1⅝ to 1 11-16 in....5·1c
1¼ & 1½ in....5·4c
1¼ & 1¾ x ⅜ to ¼ in....3·5c
1 & 1¼ x ⅜ to ¾ in....3·6c
⅝, ¾ & ⅞ x ⅜ to ⅝ in..3·7c
Nail rods....7·2c
⅛ to 1½ x ¼ & 5-16 in....4·3c
⅛ to ¾ x ¼ & 5-16 in....4·5c
1 to 1⅜ x 3-16 to No. 12..5·9c
⅛ to ¾ x 3-16 to No. 12..5·5c
1 in....5·8c
¼ in....6·3c
⅜ in....6·8c
⅝ in....7·3c
½ in....7·8c

Round and Square.—

1 to 1⅛ in.....3·3c	⅝ to 7-16.....4·0c
2 to 2⅜ in.....3·6c	½ in.....4·1c
3 to 3⅝ in.....3·8c	5-16 in.....4·5c
3⅝ to 4 in.....4·3c	⅝ in.....5·0c
⅝ to 9-16 in.....3·4c	9-16 in.....6·9c

Oval Iron.—

⅛ to 1⅛ in.....3·9c	½ in.....4·3c
⅝ to ⅞ in.....4·1c	⅝ in.....4·9c

Half Oval and Half Round.—

⅛ to 1⅛ in.....4·2c	½ in.....5·4c
⅝ to ⅞ in.....4·7c	⅝ in.....6·9c

	Boiled.	Charcoal.	Jun.
Sheet Iron, 10 to 14	5·3	6·8	8·3
" 15 to 20	5·5	7·0	8·5
" 21 to 24	5·7	7·2	8·7
" 25 to 26	5·9	7·4	8·9
" 27	6·1	7·6	9·1

All sheets over 28 in. wide, ½c. ₱ ℔ extra.

Tank Iron.—

3-16, ¼ & ⅝ in. thick..5·3c	Heads flanging.....5·0c
Boiler Plate Iron....8·0c	Plow Slabs.....5·9c
Heads not flanging....6·2c	Plow Wings.....6·4c

Railroad Iron—Countersunk and Punched.—

1¼ x ⅜, 7-16 & ½ in....4·3c	1½, 1¾ & 2 x ½ & ⅝ in..3·8c
1¼ x ¼ & 5-16 in.....3·3c	1½ x ⅜ in.....4·0c

Extras for Cutting to Length.—

Flat bars and rounds and squares.....0·1c	Light bands and wagon box iron.....0·2c
Flat bars for tire.....0·1c	Hoops.....0·3c

The following are the Card rates of Lewis, Oliver & Phillips:
Iron, standard list, assorted sizes, for large orders, 3·3c, card rate, 2 % off net.
Flat Rail (1¼x¼), punched and coun'sunk..4·7c ₱ ℔ net
Iron Wedges.....5c ₱ ℔ net
Norway Nail Rods.....9½c ₱ ℔ net
Crow Bars (in ordering please state whether "Wedge" or "Pinch" point).....6 c ₱ ℔ net
Beetle Rings.....9½c ₱ ℔ net
Fence Pickets—
⅝ round, bent to shape..80c ₱ ft. of fence, less 5 % off net
Discount off Standard List.
Carriage and Tire Bolts (new list).....70&5 % off net
Plow Bolts.....30&5 % off net
Stove Bolts.....5 % off net
Machine and Square Head Bolts.....30 % off net
Coach and Lag Screws.....30 % off net
Bolt Ends.....25 % off net
Harrow Teeth, in lots of 1 ton or more, packed in casks, 1 in. diam. 3½c ₱ ℔ net; ⅞ in. diam. 4¼c ₱ ℔ net; ¾ in. diam. 4½c ₱ ℔ net.
Patent Headed Harrow Teeth, packed in casks, ½c ₱ ℔ ex
Skein Bolts, in bulk, in lots of 1 keg or more, ⅝ in. diam. 7c ₱ ℔ net; 9-16 in. diam. 8c ₱ ℔ net; ½ in. diam. 9c ₱ ℔ net. 1c ₱ ℔ extra when less than 1 keg of each size is ordered.
Screw Hook and Eye Hinges, ⅝ to 1 in. diam. 9½c ₱ ℔ net; ⅜ in. diam. 10½c ₱ ℔ net; ⅛ in. diam. 12½c ₱ ℔ net.
Screw and Strap Hinges, in lots of 100 pairs or more, ¾ to ⅞ in. long, 6c ₱ ℔ net; 8, 10 & 12 in. long, 7½c ₱ ℔ net.
Strap and T Hinges, 40 % off net, delivered as customary
Screw Hitching Rings.....$5 50 ₱ 100 net
Dur k Nest Tuyere Irons.....$15 00 ₱ doz net
Cast Iron Washers.....₱ ℔ 4½c net
Bridge and Roof Bolts—
1 to 2 in. diam. over 8 ft. long.....₱ ℔ 4½c net
1 to 2 in. diam. from 4 to 8 ft. long..... " 4½c net
1 to 2 in. diam. from 1½ to 4 ft. long..... " 5½c net
⅝, ¾ and ⅞ in. diam. over 4 ft. long..... " 5½c net
⅝, ¾ and ⅞ in. diam. from 1½ to 4 ft. long " 6½c net

WAGON HARDWARE.

Wagon Box Strap Bolts—

10 in. long by 7-16 at Screw End, ₱ set of 8 bolts..						35c
12 "	⅜	"	"	8	"	70c
10 "	9-16	"	"	8	"	90c
12 "	9-16	"	"	8	"	
14 "	9-16	"	"	8	"	$1 00
10 in. long by ⅝ at Screw End, ₱ set of 8 bolts..						1 00
12 "	⅝	"	"	8	"	
14 "	⅝	"	"	8	"	1 10
16 "	⅝	"	"	8	"	1 20

5c ₱ set for each additional inch over 14 in. All lengths made.
Wagon Box Rods, narrow track, each.....18c
" " wide track, each.....20c
Single Tree Irons, ₱ set of four pieces.....38c
Wrought Iron Bolster Plates, 2¾ in. wide, ₱ set.....60c
" " 3 " " 65c
" " 3½ " " 70c
" " 3½ " " 75c
Wagon Brake Ratchets, each.....16½c
" " " finished with guard, each..45 c
Wrought Hammer Straps, heavy pattern, each.....16 c
" " " light " each.....13½c
" Rub Irons, each.....11 c
Stay Chain Hooks, each.....8 c
Double and Single Tree Clips, figure 1, each.....9 c
" " " 2, each.....10 c
" " " 3, each.....12 c
Strap Bolts, Rods, Single Tree Irons, Bolster Plates, Brake Ratchets, Hammer Straps, Rub Irons, Stay Chain Hooks and Clips, in lots of 100 sets.....dis 25 %
Wagon Box Staples, 1½ to 2¾ in. to clinch. ₱ 1000 $12 50 net
" " Box Iron, to rivet on. ₱ 1000 8 50 net
Neck Yoke Eyes, each.....5¼c net
" " with ⅜ rings, each.....8 c net
King Bolts, ¾, 1, 1¼, and 1½ in. diam.....₱ ℔ 4¾c net
Wagon Rivets, ex. large, flat, oval and steeple head, ¼ in. diam. all lengths.....9 c net
Wagon Rivets, 3-16 in. diam., all lengths..... 11 c net
" " & Nails, in 5 ℔ paper boxes....₱ ℔ 1c extra
" " in 25 ℔ wood " ..... ½c extra
Wagon and Hinge Nails, ¼ in.....₱ ℔ 17 c net
" " " 3-16 in..... " 19 c net
Double Tree Plates.....
Coupling " ..... } 9 c net
Tongue " .....
Neck Yoke Plates..... 12 c net
Tongue Cap Iron, 1¼, 2 & 2¼ in. wide, same price ₱ ℔ as Band Iron.
Wagon Chains, Stay Lock and Tongue, 5-16 in, ₱ ℔ 11½c net; ¼ in., 12½c. net

DETROIT.

(Reported by Messrs. Jewett & Root.)

Tin Plate.—Best Charcoal

IC, 10x14	$12 50
IX, 10x14	15 25
XX, 10x14	18 00
IC, 12x12	13 00
IX, 12x12	15 75
IC, 14x20	18 00
IX, 14x20	16 25
XX, 14x20	19 00
XXX, 14x20	21 75
XXXX, 14x20	24 50
DC, 100 Plate	12 00
DX, "	14 75
DXX "	17 50
DXXX "	20 25
DXXXX 100 Plate	23 00
IX, 14x14	25 75
IC, 10x14 W	12 00
IX, 10x14 W	14 75

Roofing Tin.—Best Char.

IC, Terne, 14x20	$11 75
IX, " 14x20	14 50
IC, Terne, 20x28	25 50
IX, " 20x28	30 00

Coke Tin.—

IC, 10x14 Coke	$10 50
IX, 10x14, Coke	13 25
IC, 14x20, "	11 50

Sheet Zinc.—Any width.....10½c

Copper.—

Sheathing	33c
Copper Bottoms	36c

Planished Copper.—

Sheathing, 14x48	41c
Boiler Size, No. 7	43c
" " No. 8	43c
" " No. 9	43c

Pig Tin.—Large Pigs..35c
Small Pigs.....36c
Bars.....37c
Solder.—No. 1.....21c
No. 2.....19c
Bright Wire...dis 30% off
Sheet Iron.—
No. 18 Am. Com.....5·75
No. 24 Am. Com.....5·75
Pat. Am. Russia "A,"
Nos. 24, 25 & 26.....14c
Pat. Planished Russia.....15c
Russia No. 9, 10, 11&12...21c
W. D. WOOD'S & CO.'S SHEET IRON.—

Nos. 15 to 20 Smooth	$7 05
" 21 to 24	7 25
" 25 & 26	7 45
" 21 to 24 Char'l	8 75
" 25 & 26 "	8 95

Bar Steel.—Silver, ₱ ℔ 21c; Crescent, 17½c.
Iron Wire.....dis 25 %
Enameled Ware.....dis 33⅓ %
One Piece Corrugated Elbows.....dis 10 %
Iron Gas Pipe.....dis 65 %

Charcoal Iron.		Russia Iron.	
4¼ inch	₱ doz $3·75	4¼ inch	₱ doz $8·00
5 "	4·25	5 "	10·00
5½ "	5·25	5½ "	13·00
6 "	5·25	6 "	13·00
7 "	6·50	7 "	14·00

Leader Elbows—Flat Crimp Retinned.—

	₱ doz.		₱ doz
2-inch	$2 00	2½-inch	$2 25
3-inch	2 50	3½-inch	3 00
4-inch	3 50	4½-inch	4 00

Sheet Iron Bread Pans.....₱ ℔ 12c
American Broilers.....₱ doz. $18·50
Tinmen's Machines.....net list
Sad Irons.....₱ ℔, 5½c
Brass Kettles.—Ansonia.....48c

CINCINNATI.

Reported by Sellew & Co., Importers and Jobbers Metals, No. 214, 216 and 218 Main street.

Tin Plate.—I. C. 10x14 Charcoal.....$12 00 @ 14 00
I. X. 10x14 Charcoal..... 15 50 @ 17 00
I. C. Terne 14x20..... 11 00 @ 12 50
I. C. Terne 20x28..... 21 00 @ 25 50
I. C. Continuous..... 28 00
Block Tin.— Bars.....₱ ℔ 39c
Pigs.....37½c @ 38c
Solder.— A 1.....₱ ℔ 24c
S. & Co.....₱ ℔ 28c Roofing..... " 22c
Lead.—Pig..₱ ℔ 7½c @ 8c. Bar.....₱ ℔ 8c @ 9c
Copper.—
Ingot.....₱ ℔ — Sheets, 6 to 9 "b...₱ ℔ 41c
Planished... " @ 40c " 10 to 12 o.... " 33c
Sheathing.. " @ 35c Braziers 13 lb..... " 35c
Copper Drops 37c @ 38c Copper Bottoms .. " —
Zinc.—Cask, 500 to 1000 lbs.....₱ ℔ 11 c
Case, 100 lbs..... " 11½c
Slab..... " 8¾c @ 9c
Brass.— Roll, No. 38 to 40...₱ ℔ 50c
Roll, No. 6 to 30..₱ ℔ 45c Wire, No. 0 to 20...₱ ℔ 50c
" 30 to 38.. " 65c " 20 to 25... " 60c
Babbit Metal.— Black Lead.....₱ ℔ 25c
Sellew & Co.....₱ ℔ 35c Market..... " 15c
Antimony.....₱ ℔ 20c
Bismuth.....₱ ℔ $6 00
Nickel.....₱ ℔ $3 00
Sheet Iron.— Am Russia A...₱ ℔ 14 @ 15c
Russia.....₱ ℔ 20c @ 22c " " B.. " 13 @ 14c

	Com. B.	Smooth Fin. S. I. U.	Smooth D Re'fd.
15 to 20	6·0c	7·5c	9·0c
22 to 24	6·2c	7·8c	9·2c
26	6·4c	8·0c	9·4c
27	6·6c	8·2c	9·6c

Galvanized Iron.—Full bundles.....dis 25 %

Nos. 15 to 20	15c	No. 27	18c
22 to 24	16c	28	20c
25 to 26	17c		

Bar Steel.—Silver, ₱ ℔ 21c; Crescent, 17½c.
Iron Wire.....dis 25 %
Enameled Ware.....dis 33⅓ %
One Piece Corrugated Elbows.....dis 10 %
Iron Gas Pipe.....dis 65 %

Charcoal Iron.		Russia Iron.	
4¼ inch	₱ doz $3·75	4¼ inch	₱ doz $8·00
5 "	4·25	5 "	10·00
5½ "	5·25	5½ "	13·00
6 "	5·25

Steel.

THREE 1st CLASS PRIZE MEDALS. CLASSES 1, 21, 22, Great Exhibition of Industry, LONDON, 1851.

MEDAL OF HONOUR, SOCIETY OF ARTS & INDUSTRY, LONDON, 1856.

1st CLASS PRIZE MEDAL, CLASS 1st UNIVERSAL EXHIBITION OF INDUSTRY PARIS, 1855.

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BEST CAST STEEL WIRE, ADAPTED SPECIALLY FOR MECHANICAL PURPOSES;

Also for ROPES, NEEDLES, FISH HOOKS, PINS, CRINOLINE, &c.

BEST CAST STEEL FILES, SAWS, EDGE TOOLS,

HACKLES, GILLS, CARD CLOTHING, CARD TEETH, HACKLE AND GILL PINS, FISH HOOKS, NEEDLES. &c.

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BARROW IN FURNESS,

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MANUFACTURERS OF

Steel Rails, Tyres, Wheels,

Axles, Shafting, Boiler & Ship Plates, Bessemer Pig Iron, etc., etc.

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For Tools, Cutlery, Saws, Files, Augers, Gimblets, &c.; Sheet Cast Steel for SPRINGS AND STAMPING COLD;

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DOG BRAND FILES,

Unsurpassed, if equaled in quality.

Bailey Lane Works, Sheffield, England.

Warehouse 82 [illegible]hn St., New York.

Established 1810.



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CELEBRATED CAST STEEL,

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In calling the attention of consumers of Steel in any of the parishes above enumerated, we would respectfully assure them of our ability to supply an article, that cannot be excelled in quality, temper, and adaptation in all respects to the various purposes for which it may be required. Half a century of practical experience in all departments of Steel manufacture, a long established reputation in England, and the Continent of Europe, and in the Eastern States principally of this Country, encourage us to solicit a universal trial of our Steel for the above or other purposes for which a first class material in quality, temper, and durability is needed

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Bailey Street and Broad Lane Steel Works, } SHEFFIELD, ENGLAND.

Particular attention is paid to quality and temper for

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Railroad Iron, Pig Iron, Merchant and Ship Iron,

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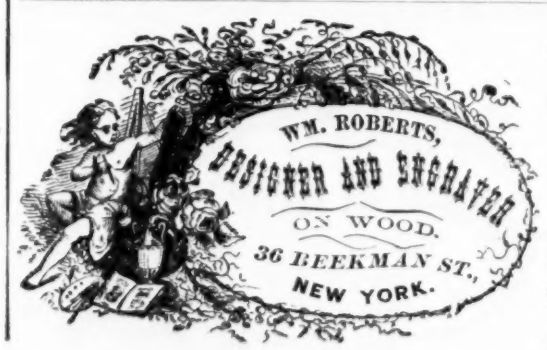
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CAST STEEL,

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All descriptions of **Cast and German**

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Elliptic and Side Springs, Seat Springs,

AXLES, STEEL TIRE,

Plow Wings, Shares, Cultivators,

Reaper Bars, Crow Bars, &c., &c.

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TIRE, TOE CORK, SLEIGH SHOE. BLISTER & PLOW STEEL.

Also, Plow and other Iron.

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Best Refined Steel for Edge Tools.

PARTICULAR ATTENTION PAID TO THE MANUFACTURE OF STEEL FOR

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FOR LOCOMOTIVES, BOILERS AND FIRE BOXES,

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REITER, LAVELY & CO.,

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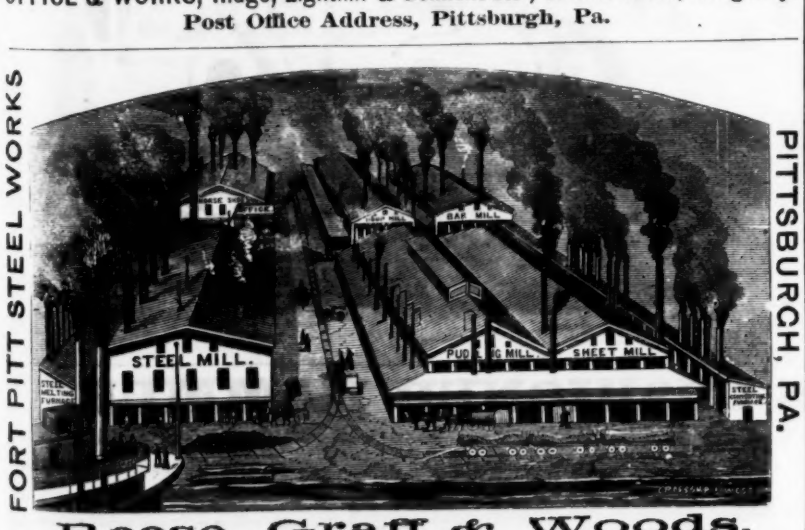
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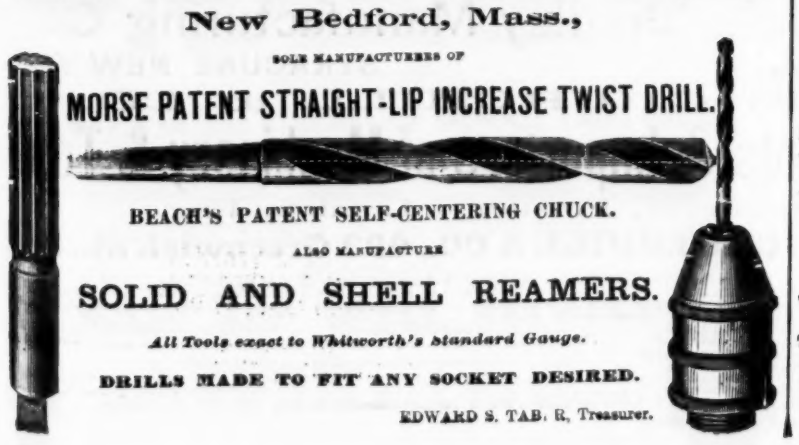
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BEACH'S PATENT SELF-CENTERING CHUCK.

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All Tools exact to Whitworth's Standard Gauge.

DRILLS MADE TO FIT ANY SOCKET DESIRED.

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(Reported by Markley, Alling & Co.)

Agricultural Implements.—
Scythes—Dunn Edge Tool Co.....dis 25 %
Hay and Manure Forks—Otsego extra C. S.....dis 30 %
Hoes and Garden Rakes—Jackson and Otsego...dis 30 %
Scythe Stones.....dis 25 %
Scythe and Bush Snathes.....dis 25 %
Harvest Rakes and Barley Forks.....dis 25 %
Revolving Horse Rakes.....dis 25 %
Handles—Fork and Shovel.....dis 25 %
Cradles—Nithington, Cooley & Co.....dis 25 %
—Genuine Morgan.....₩ doz net $34 00

Augers and Bits.—
Ives' extra C. S....dis 30 % | Snell's.....dis 10 %
Jennings' ....dis 5 % | " Car Bits.....dis 10 %
Cook's.....dis 30 %

Axes.—Amoskeag Yankee.....₩ doz $13 50
Amoskeag Crescent..... " 14 00
Hunt's Yankee..... " 14 00
Kennebeck Yankee..... " 12 00
Lippincott " ..... " 13 00
" Crown..... " 14 00
" Beveled..... " 14 50
Jefford's Silver Steel..... " 13 00
Red Warrior, Beveled..... " 14 00
Kennebeck, Handled..... " 15 00
Boy's, Handled..... " 12 00

Bolts.—Carriage and Tire.....dis 70&15 %
Cast Barrel and Shutter.....dis 20&10 %
Wrought Iron Barrel.....add 10 %
" " Square.....net list

Butts.—Cast Fast Joint, Narrow.....dis 20 %
Cast Fast Joint, Broad.....dis 20 %
" Loose Joint.....dis 45 %
" " Pin, Reversible.....dis 40 %
" " Japanned.....dis 35 %
" " Silver Tipped.....dis 35 %
Wrought Narrow, Fast Joint.....dis 30 %
" Broad " " .....dis 30 %
" " Loose " .....dis 30 %
" Loose Pin.....dis 30 %
" Table.....dis 20 %
" Brass.....dis 10 %
Garretson's Blind Butts, Wood.....doz sets $1 75
" " Brick.....doz sets 2 75
Parker's " Wood.....doz sets 1 85
" " Brick.....doz sets 2 75

Casters.—Iron Plate.....dis 25 %
Brass Wheel Plate.....dis 25 %
Porcelain Wheel Plate.....dis 25 %
" " Bed.....dis 25 %
Iron Wheel Bed.....dis 25 %

Chisels.—Butcher's Tanged Firmer.....dis 30 %
" Long Paring.....dis 30 %
Witherby Socket Framing.....dis 50&20 %
" " Firmer.....dis 50&20 %
" " Corner.....dis 50&20 %
" " Slicks.....dis 50&20 %

Coffee Mills.

Box 4 Iron	$ 3 75	Box 85 Cast Steel	$13 00
" 103 "	5 25	Side 50 "	4 75
" 102 "	6 25	" 60 "	5 75
" 107 Britannia	7 50	" 70 "	7 25
" 106 "	8 50	" 90 "	18 00
" 25 Union	11 00	" 15 Union	7 00
" 85 "	13 00	" 20 "	8 00
" 75 Cast Steel	11 00		

Cutlery.—American Table.....dis 20 %
" Pocket.....dis 25 %

Door Springs.—Torry.....₩ doz $6 00
Rubber..... " 4 00
Boon's..... " 5 00

Drawing Knives.—Witherby Tool Co....dis 50&20 %
Ohio Tool Co.....net list

Files.—Butcher's.....$7 00 £
Nicholson's.....$5 00 @ $5 50 £

Hammers.—
Maydole's.....net list | Yerks & Plumb.....net list
| Cheney.....net list

Handles.

Extra Axe	₩ doz. $3 00	Coal Pick, No. 1	₩ doz $2 00
No. 1 Axe	" 2 25	Sledge, No. 1	" 2 00
No. 2 Axe	" 2 00	Hatchet	" 65
R.R. Pick, No. 1	" 2 00	Hammer, A. E.	" 65

Hatchets.—

	1	2	3
Amoskeag Shingling	$7 25	$8 00	$8 75
" Claw	7 75	8 50	9 22
" Lath	7 50	8 25	
" Solid Steel			12 00

Hinges.—Strap and T.....dis 35&5 %
Screw Hook and Strap, 8 to 12 in.....net, 9c. ₩ lb
" " 14 to 24 in.....net, 7½c. ₩ lb
Hook and Eye Hinges.....net 12c. @ 16c. ₩ lb
Gate, No. 35, State.....₩ doz $3 50
" No. 3, In and Out..... " 3 50
" Blinn's Pat..... " 7 50

Horse Nails.—Northwestern, 8d.....24c
Ausable, 8d.....24c
Globe, 8d.....26c

Kettles.—Brass.....50c | Enameled.....dis 15 %

Locks and Knobs.—
Norwalk Lock Co. dis 20 % | EagleLock Co.....dis 15 %
Branford " . dis 20 % | Am. Pad Locks.....dis 25 %
| Contl'al Lock Co...dis 10 %
| Woodrun Patent ...net list
| Stowe's Sausage Stuffers.....net list
| Enterprise Patent..dis 5 %

Meat Cutters.—
Haven's Patent ...net list
Hale's " ...dis 10 %

Molasses Gates.—
Stebbin's Patent ..dis 50 %

Nails.—10d to 60d.....per keg $4 25 @ 4 37½

Oil Stones.—Washita No. 1.....net 30c ₩ lb
Washita Slips.....net 60c "
Hindostan No. 1.....net 9c "
" Axe.....net 10c "
" Slips.....net 15c "

Picks and Mattocks.—Picks, Railroad, Axe Finish.....₩ doz $12 00
Picks, Coal, Axe Finish..... " 10 00
Mattocks, L. C., Axe Finish..... " 15 00
" S. C., " ..... " 14 50
Grub Hoes, Axe Finish, No. 2..... " 11 00

Planes.—Ohio Tool Co., Bench.....dis 20 %
Sciota.....dis 25 %
A. Howland & Co., Beach.....dis 20 %
" Fancy.....dis 30 %
Bailey Patent Iron.....dis 15 %
Plane Irons, Butcher's.....dis 30 %

Rivets.—Iron.dis 10 @ 15 % | Copper, No. 7 net, ₩ lb, 55c
Tinned.....dis 10 @ 15 %

Rules.—Stanley Rule and Level Co.....dis 50&10 %
Hubbard & Curtiss Mfg. Co.....dis 50&10 %

Sad Irons.—Best A No. 1.....₩ lb, 4½ @ 4¾c
" Copper Face Star...₩ lb, 4½ @ 4¾c

Sandpaper.
Wiggins & Stevens, No. 0 to 1½.....₩ ream, net, $4 50
" " No. 2 to 3..... " 5 00

Sash Locks.—Champion.....₩ gross, net, $12 00
Hopkins & Dickinson.....dis 10 %
Judd's Patent.....dis 10 %
Corbin's Patent.....dis 10 %
Clark's Patent.....dis 20 %

Saws.—H. Disston & Sons.....dis 10 %
Champion X Cut.....₩ foot, net, 40c
M. A. & Co. X Cut..... " 50c
Lightning Cut..... " 66c

Screws.—American Screw Co.—Iron...new list dis 50 %
American Screw Co.—Brass..... dis 50 %

Shovels and Spades.
Ames' Black Shovels.....₩ doz $14 50
" Polished " ..... " 15 50
" Patent " ..... " 17 50
Alling " ..... " 17 50
" " " Molders'..... " 18 00
Crane's Black " ..... " 12 00
" Polished " ..... " 13 00
Smith's " " B. S. L. H. Rd. Pt..... " 13 50
" " " B. S. D. H. Rd. Pt..... " 14 00
Ames' Black Spades..... " 16 00
" Polished " ..... " 17 00
" Patent " ..... " 17 50
Alling " ..... " 15 50
Crane's Black " ..... " 12 50
" Polish'd " ..... " 13 50

Scoops.—Alling Steel Polished, No. 2.....₩ doz, $18 50
Alling Steeled Polished, No. 3..... " 14 00
" " " No. 4..... " 14 50
" " " No. 5..... " 15 50
" " " No. 6..... " 16 50
" " " No. 7..... " 17 50
" " " No. 8..... " 18 50
" " " No. 10..... " 21 50
Crane's Polished, No. 5..... " 13 50
" " No. 6..... " 14 50
" " No. 7..... " 15 50
" " No. 8..... " 16 50
Crane's Black Coal, No. 4..... " 17 50
" " " No. 5..... " 18 00
Preston, Black Scoops No. 1..... " 12 00
" " No. 2..... " 12 50
" " No. 3..... " 13 00
" Half Pol. Scoops No. 1..... " 12 50
" " " No. 2..... " 13 50
" " " No. 3..... " 14 50
Lippincott, Half Pol. No. 2..... " 15 00
" " No. 3..... " 16 00

Wrenches.—Taft's.....dis 60 %
Coe's Imitation.....dis 50 %
Coe's Genuine.....dis 30 %

Wringers.—Novelty Clothes Wringer.....₩ doz $2 00
Universal Clothes Wringer..... " 72 00

Chicago Metal Market.

(Reported by Cragin Bros. & Chandler, 141, 143, and 145 Lake St.)

Tin Plate.—

I. C. 20x14, Coke	$11 50	IXX, 14x20, Charcoal	19 50
IC, 10x14, Charcoal	12 50	IXXX, 14x20, "	22 50
IX, 10x14 "	15 50	IXXXX, 14x20, "	25 50
IC, 12x12, "	13 00	IX, 14x14, "	27 00
IX, 12x12, "	16 00	DC, 100 Plate, "	12 50
IC, 14x20, "	13 50	DX, "	15 50
IX, 14x20, "	16 50	DXX, "	18 50
		DXXX, "	21 50
IC, 14x20, Coke Roofing			19 50
IC, 10x20 Coke, for Gutters			12 00
IC, 14x20, Charcoal Roofing			15 00
IX, 14x20 "			25 00
IC, 20x28, "			30 00
IX, 20x28, "			

Pig Tin,—
Large, 60 lb.....40c | Small, 30 lb.....41c | Bar Tin.....42c

Zinc.—
In casks 1000 lbs.....c | In sheets.....11 c
" 500 " .....10½c | Slab.....9c

Copper.—Copper Bottoms.....37c
Sheathing Copper.....36c
Planished Copper.....41c
" " cut to lengths.....43c

Braziers' Sheets, 30x60.—6 to 8 lbs.....46 c | 15 to 100 lbs.....40c
10 and 12 lbs.....43c | Ingot Copper.....
| Bolt " 45c

Solder.—Extra Fine, C. B. & Co.'s Brand .25c | Ordinary, No.....21c
Fine, No. 1.....23c | Plumbers' Solder.....25c
| Braz'rs' or Spelt'r Solder.35c

Antimony.....30c

Babbit Metal.....15c @ 25c.

Galvanized Iron Conductor Pipe.....₩ lb 10c

Sheet Iron.—

	Common.	Smooth.	Charcoal.
No. 14 to 24	5¾c	6¾c	8¾c
25 & 26	6 c	7 c	8¾c
27	6¾c	7¾c	9 c

Add ¼c ₩ lb for 30 in. wide.

Galvanized Iron.....dis 10 %

No. 16 to 20	12c	No. 27	15c
21 to 24	13c	28	16c
25 & 26	14c		

Russia Iron.—
Perfect.....22c | No. 1 Stained.....20c
| In Sheets, 1c. higher.

American Russia.—
A.....14c | B.....11c
| In sheets, 1c higher

Lead.—
Pig.....8½c | Lead Pipe, in full coils 10½c
Bar.....10c | Lead Pipe, when cut, 11c
| Sheet Lead.....10½c

BOSTON.

(Reported by Macomber, Bigelow & Dowse, 42 to 48 Batterymarch St.)

Anvils.—Eagle, ₩ lb 11c. currency.....dis 15 @ 15&5 %

Axes.—Forester's Favorite, Bronzed.....$13 00
Blue Jackets, Blue..... 12 50
Chopper's Pride, Bronzed..... 11 00
Red Cross, Red..... 10 50
Red Cross, Handled..... 13 50
Boy's Handled Blue Jackets..... 12 00
Hunts Axes.....₩ doz $15 @ 17 50 net @ 5 %
" Hatchets.....net
Shingling Nos. 1, 2, 3.....₩ doz $7 25 8 00 8 75
Claw " 1, 2, 3..... " 7 75 8 50 9 25
Lathing " 1, 2, 3..... " 7 50 8 25 9 00

Axe Handles.—Hickory, Fisher Pat..No. 1 ₩ doz $2 75
Hickory, Fisher Pattern..... " 2 " 2 00
Oak, " " ..... " 1 " 2 75
" " " ..... " 2 " 2 00
" " " ..... " 3 " 1 50

Bells.—Hand.....dis 60&10 %

Bolts.—Carriage. Phila.. " Girard Works .....dis 50 %

Borers.—Angle. Backus.....dis 30 %

Boring Machines.—Angle.....each $5 25
Common. Snell's quality.....each 4 00

Breast Drills.—Miller's Falls, $30 per doz.....dis 25 %

Braces.—Barber's.....dis 40 %
Backus'.....dis 50 %
Spofford's.....dis 40 %

Butts.—Union Drilled Loose Joint.....dis 45 %
" " Wire Fast Joint.....dis 35 %
" " Acorn Loose Joint.....dis 40 %
Brass Butts.....dis 25 %
Wrought Table Butts and Back Flaps.....dis 30&7½ %
Wrought Narrow Butts.....dis 30&7½ %

Carriage Jacks.—Young America.....₩ doz $21 00

Cartridges.—" U. S. Cartridge Co."..... dis 50 %

Chisels.—
Socket Framing M., B. & D's, warranted...dis 60&10 %

Cordage.—Manila.....₩ lb, 16½c
American Tarred Hemp Lath Yarn.....₩ lb, 10c

Cow Ties.—
No. 30, open ring, 3 ft., No. 6, with toggle..₩ doz $3 37
No. 35 " 3 ft., No. 6 " snap....₩ doz 3 62
No. 40 " 3½ ft., No. 5 " toggle..₩ doz 3 75
No. 45 " 3½ ft., No. 5 " snap....₩ doz 4 00
No. 50 " 4 ft., No. 4 " toggle..₩ doz 4 25
No. 55 " 4 ft., No. 4 " snap....₩ doz 4 50
No. 60 " 4½ ft., No. 3 " toggle..₩ doz 4 50
No. 65 " 4½ ft., No. 3 " snap....₩ doz 5 00

Crow Bars.—Iron. Steel Points.....₩ lb, 5½c

Door Springs.—Stimson's Patent.—
No. 7, Light inside doors, $12 00.....dis 25 %
No. 6, " outside " $18 00.....dis 25 %
Torrey's.....$4 00

Files.—Earl Smith & Co.'s English.....$5 to £ gold
American.....$5 to £ currency, less 10 %
Nicholson.....$5 to £ currency, less 10 %

Funnel Irons.—$2 50 $2 50 $4 50 $3 25 per doz
5, 5½, 6, 7 inch
Deep Flange, $3 50 $3 75 $4 00 per doz
5, 5½, 6 inch

Hammers.—Maydole.....dis 5 %
M., B. & D., solid cast steel, adze eye, No. 1, $10; 1½, $10 50 " " " " bell face, No. 1, $11; 1½, $9 75.

Hangers & Rollers.—Novelty.....dis 30 %

Hatchets.—Underhill Edge Tool Co.....dis 10 %
Underhill pattern, solid, C. S. lathing.....$9 50

Hinges.—Strap and T, Stanley Works.....dis 30&7½ %
Wrought Screw Hook.....₩ lb 8c

Locks.—P. & F. Corbin.....new list dis 50&2 %

Mattocks.—K. P. & Co., axe finish, long cutter..$13 75
Short cutter..... 13 50

Meat Cutters.—" Miles'."..... dis 20 %
No. 1, $22; No. 2, $30; No. 3, $40 per doz.
American, $6 each.....dis 25 %

Metal.—Babbitt, No. 1, 35c; 2, 25c; 3, 16c; 4, 15c ₩ lb

Nails.—10d and larger.....$4 60

Paper.—Finest Quality Manilla.....₩ lb 11c

Parers.—Reading, New Pattern.....per doz $8 00
Turn Table..... " 5 50

Picks.—K. P. & Co., Polished Points—
5 to 6.....per doz $10 00 ; 6 to 7, $10 50

Pulleys.—Clark & Co.'s Axle, 1¾ in.—
.....per doz 37c. ; 2 in., 42c
No. 115, Axle, 1¾ in.....per doz 37c

Plated Ware.—Rogers Bros.....new list dis 30 %

Plumb & Levels.—" Davis" Pat. Adjust..dis 50&10 %
" Davis" Pat. Adjustable Inclinometer, wood and iron.....dis 33⅓ %

Pocket Knives.—Comn. Cutlery Co.....new net list

Rivets.—Black.....dis 25 %
Carriage, oval head, Nos. 3, 4, 5, 6, 7, 8.
13 13 14 14 15 16c ₩ lb net

Sad Irons.—Reading.....₩ lb 4¾

Sand Paper—0 to 2, $4 25 ; 2 to 3, $4 75.....dis 10 %

Saws.—Disston's.....dis 12½ %
Lightning A cut, Boynton's.....per foot 6½c
" Saw Blades, 32 inch.....per doz $7 00
" Framed Saws.....per doz $9 00
Common " " .....per doz 6 00
Disston " " .....per doz 9 00
One man X cut.—Lightning.....$2 75 each
Disston's $3 00 each.....dis 12½ %

Scythe Stones.—
"Willoughby Lake," first quality.....₩ gross $6 50
" " second quality..... " 3 00

Saw Clamps.—Reading.....$11 25

Screws.—American Screw Co..... new list dis 82½ %

Shovels.—O. Ames.....new list dis 12½ %
M. B. & D.....new list dis 12½ %
Snow, malleable iron tip, D handle.....$6 50
" " plain..... 5 50
Carr's Iron, Black Strap...Black, $5 50 ; Polished, $6 50
Collins, C. S.....$8 00

Sifters, Coal.—McMasters.....$12 00

Sinks.—Cast Iron, 2, 2½, 3, 3½, 4, 4½ feet.
$1 37 $1 62 $2 25 $2 75 $3 75 $4 75 each.

Tools.—Aiken's Pattern, 20 in set ; Miller's Falls, $12 00 per doz.....dis 15 %

Traps.—Oneida.....dis 20 %

Blake's.....dis 20&5 %

Vises.—B. P. & Co.'s Solid Box, Blacksmith...₩ lb 15½c
Parker's Parallel.....dis 10 %
Backus.....dis 25 %
"Howards." Parallel.....dis 15 %
Fisher & Norris' Double Screw Paral'l..dis 15 @ 15&5 %

Weights.—Window Weights.....₩ lb 2¾c

Wrenches.—Coe's Genuine Wrenches.....dis 40 %

Wringers.—
Novelty and Universal } Tub No. 2 } less than 5 doz..₩ doz $ 72 00
5 doz..₩ doz 69 00
10 doz..₩ doz 67 00
Monitor, Double Cogs.....per doz 66 00
Novelty Bench, No. 4, } less than 5 doz..₩ doz 108 00
5 doz..₩ doz 104 00
10 doz..₩ doz 101 00

Boston Metal Market.

(Corrected by Fuller, Dana & Fitz.)

Tin Plates.—₩ box

I. C. Char. 10x14 @	$12 50	Char. Roof. I C, 10x14	$12 00
I. C. Coke 10x14..	11 00	Coke " I C, 10x14	11 00

Pig Tin.— ₩ lb
Banca.....39c

Copper.— ₩ lb
Sheathing.....33c

Lead.— ₩ lb
Pig.....7½c

Spelter.....₩ lb 9½c

Zinc.—Sheet.....₩ lb 10½c

Antimony.....16c

Iron.—Sheet Iron, Russia..... " 20c
Sheet Iron, English..... " 6½c
" " American Refined..... " 8¾c
" " Galvanized..... " 11¾c
Plate Iron..... " 4½c
Swedish and Norway Bar Iron, gold.....₩ ton, $137 50
" " " Shapes, gold..... 147 50
Norway Nail Rods, first quality, gold..... 165 00
" " second " " 150 00
Best Refined Bar Iron..... 75 00
The "Burden Best" Iron..... 112 00
American Pig Iron, Foundry, No. 1, x..... 38 50
" " No. 2, x..... 36 50
" " Gray Forge..... 33 50
Scotch Pig Iron.....₩ ton 46 00 @ 51 00
Wrought Scrap Iron..... 45 00

Steel.— ₩ lb

Eng. Tool	18c	German	11c
American Tool	15½c	Spring	8½c
" Mach	11c	Tire	7½c
Bessemer	7½c	Sleigh Shoe	5½c
		Toe Calk	6½c

ST. LOUIS.

Corrected weekly by Semple, Birge & Co.

Anvils.—Armitage.....₩ lb, gold, 15c
Peter Wright's..... " 14c
Wilkinson's..... " 12½c

Apple Parers.—Conqueror.....₩ doz, $9 00
Lightning..... " 9 00
Turn Table..... " 9 00

Augers and Bits.—Cook's.....dis 25 %
Ives'.....dis 20 %
Jennings'.....dis 5 %
Snell's.....dis 12½ %

Axes.—Hunt's.....₩ doz $14 00 @ 15 00
Lippincott's..... " 13 00 @ 14 00
Lippincott's Pioneer..... " 13 50 @ 14 50
Simmons'..... " 13 00 @ 13 50

Axles.—Kritch & Crane Mfg. Co.'s—
Patent Taper Axles.....new list net
Swelled Taper Axles.....new list net
Concord Axles.....new list net
Red Jacket Axles.....new list net
Common Axles, 1½ inch and upward.....₩ lb, 8½c
" " less than 1½ inch..... " 9½c

Bells.—Troy, Church.....₩ lb, 50
Light Brass, Hand.....dis 50 %
Moore's, Cow.....dis 20 %

Bolts.—Arms, Bell & Co.'s Machine.....dis 20 %
Arms, Bell & Co.'s Carriage and Tire.....dis 70&10 %
Norway Iron Carriage and Tire.....dis 40 %
Cast Iron Barrel, Shutter, &c.....dis 25 %

Cast Butt Hinges.—Narrow Fast Joint.....dis 35 %
Broad Fast Joint.....dis 40 %
" Loose " .....dis 50 %
Reversible.....dis 45 %
" Japanned and Silver Tipped.....dis 45 %
Loose Joint "Acorn " " .....dis 40 %
Excelsior Reversible Blind.....dis 30&10 %
Lull & Porter's Blind.....dis 40 %

Wrought Butts.—Narrow.....dis 20 %
Reversible.....dis 25 %
Broad.....dis 25 %
Table Hinges.....net list
Back Flaps.....net list
Inside Blind Hinges.....net list

Chain.—Eng. Coil..3-16 ¼ 5-16 ⅜ 7-16 ½ in.
13 11 10 9½ 8 8c gold
Trace.....6½-10-2 70c "
7-10-2 75c "
German Coil and Halter.....list gold dis 20 %
American Coil—Short Link.
Size, inches..... ⅜ 7-16 ½ 9-16 ⅝
Price cents ₩ lb..... 12½ 12½ 10½ 10 9½ net
Size, inches.....11-16 ⅝ 13-16 ¾ -16
Price, cents ₩ lb..... 9½ 8½ 8¾ 8½ 8¾ net
Size, inches..... 1 1 1-16 1⅛ 1 3-16 1¼
Price, cents, ₩ lb..... 8½ 8½ 8 ⅞ 7⅞ net
All larger sizes same price as 1¼ in. Stud chain 6 less than same size close link.

Chisels.—Socket, Firmer or Framing.....dis 55 %

Clothes Wringers.—Crown.....₩ doz $60 00
Novelty..... " 72 00
Universal..... " 72 00
Monitor..... " 72 00

Corn Knives.—Dunn E'ge T'ol Co.'s Clip..₩ doz $5 75
Disston's..... " 6 00

Crow Bars.—Steel Pointed.....₩ lb 7@9c
Solid Cast Steel..... " 20c

Cutlery.—J. Russell & Co.'s.....
Lamson, Goodnow & Co.'s..... } new list, dis 15 %
Landers, Frary & Clark's..... }

Files and Rasps.—
Nicholson's Mill Files.....$5 50 to the £, currency
Nicholson's Other Files..... 5 00 to the £ currency
Butcher's Mill..... 6 75 to the £, currency
Heller's & Bros Horse Rasps... 5 25 to the £, currency

Forks and Hoes.—
Auburn Mfg. Co.'s Hay and Manure Forks.....dis 30 %
" " Handled Hoes.....dis 30 %
" " Planter Eye Hoes.....add 10 %
Winsted's Planter Eye Hoes.....add 10 %

Hammers.—Yerkes & Plumb.....new list net
Masons' Hammers.....₩ lb 20c
Smith Hand Hammers..... " 22c

Handles.—Axe.....Extra. $2 75 No. 1. $2 25 No. 2. $1 75 No. 3. $1 00
Pick.....Extra. $2 50 No. 1. $2 00 No. 1½. $1 75 No. 2. $1 25
Smith & Montross Fork, Hoe and Rake.....dis 30 %
" " Broom and Mop.....$12 @ $18 ₩ M.

Harrow Teeth.—1 inch iron.....₩ lb 4½c
⅞ and ¾ inch iron..... " 4¾c
⅝ inch iron..... " 5 c
Barbed or Headed.....¼c extra

Hatchets.—Hunt's.....net list
Simmons'.....dis 10 %

Hay Knives.—Lightning.....₩ doz $22 00
Dunn Edge Tool Co.'s.....₩ doz $14 50—dis 15 %
Fisher's..... " 16 50—dis 10 %

Hinges.—Strap and T—St. Louis make.....dis 30 %

Horse Nails.—Eureka.....23c rates
Ausable.....22c "
Northwestern.....22c "
Eagle.....19c "
National Patent Pointed.....21c "
" " " Extra Finished.....22c "

Horse Shoes.—R. I. (Perkin's pat.).....₩ keg $6 75
Burden's..... " 6 75
Mule Shoes.....$1 00 extra
Rhode Island Trotting Shoes..... 2 50 "

Ice Tools.—W. T. Wood & Co.'s.....net

Locks and Latches.—
Jones & Nimick's.....revised list dis 40 %
Moorhead, Adams & Co.....revised list dis 40 %
Norwalk Lock Co.'s.....revised list dis 40 %

Mattocks and Grub Hoes.—
Klein, Logan & Co.'s Mattocks...₩ doz. $15 00 @ 16 00
" Grub Hoes, Oval Eye...₩ doz. 12 00 @ 13 00

Nails.—Wheeling.....$4 17½ rates
Orders for 100 kegs 10c ₩ keg less.

Picks.—Klein, Logan & Co.'s R. R. and Clay ₩ doz. $19 00
Klein, Logan & Co.'s Coal..... " 9 75
" " Poll..... " 12 00
" " Stone..... " 16 50
" " Tamping..... " 19 00

Planes.—Ohio Tool Co.'s.....dis 20 %
Eastern.....dis 25 %

Post Hole Augers.—Clark's Patent—
No. 1, ₩ doz. $27 ; No. 2, $30 ; No. 3, $32.....dis 20 %
Barton's Patent.....₩ doz $25—dis 20 %
Vaughn's " .....25—dis 10 %

Sad Irons.—Monitor Brand. Silver Polished... ₩ lb 5c

Sash Weights.—Standard Solid Eyes.....₩ lb 3½c

Saws.—Disston's.....dis 10 %
Spear & Jackson's.....$5 00 to £ gold
Hubbard, Lippincott, B. & Co.'s.....dis 10 %
Branch, Crooks & Co.'s.....dis 20 %
Livingston's Patent Buck.....net list

Screws.—American Screw Co.'s revised list.....dis 45 %
$2000 worth in 6 months.....2½ % extra

Scythes.—Blood's C. S. & G. S.....net list
Dunn Edge Tool Co.'s.....Lew list dis 25 %
Paris Furnace Co.'s.....dis 25 %
Waldron's English.....$10 00 to £

Scythe Stones.—No. 1 Ind'n Pond ₩ gr's, $7 00 }
Extra Indian Pond..... " 7 50 } dis 25 %
Premium..... " 9 50 }
Diamond Grit..... " 13 50 }

Shovels, Spades and Scoops.—
Ames'.....revised list dis 5 %
Lippincott's.....new list dis 10&5 %
Rowland's, Maxwell.....revised list dis 12½ %

Sledges.—Smith's Stone or Coal Sledges—
Steel Face Polished.....₩ lb, 17c
Solid Cast Steel..... " 25c
Striking Sledges.....₩ lb extra, 1c

Snaths and Cradles......dis 25 %

Springs.—Cleveland Spring Co.'s—
Carriage and Express.....dis 5 %
Blue Seat Springs.....new list dis 10 %

Tacks.—Norway Tack Co.'s ¼ weight.....dis 70 %
Brads.....dis 50 %

Thimble Skeins.—Pump & Skein Co.'s.....dis 50&5 %

Traps.—Newhouse Patent.....dis 15 %

Vises.—Solid Box.....₩ lb 16c
Wilson Mfg. Co.'s.....dis 10 %

Wrenches.—Coes' Genuine.....dis 30 %
Coes' Pattern.....dis 40 %
Taft's.....dis 50

St. Louis Metal Market.

(Corrected Weekly by Messrs. R. Sellew & Co.

Tin Plate.

IC, 10x14, Charcoal	$13 00	IC, continuous, 20 in. x 200 ft.	
IX, 10x14, "	16 00	IX, continuous, 20 in. x 200 ft.	
IC, 12x12, "	13 50		
IX, 12x12, "	16 00		
IC, 14x20, "	14 00	IC, 10x14, best Coke	$12 00
IX, 14x20, "	17 00	IC, 10x14, good "	11 50
IC, 14x20, Terne	12 50	IC, 10x20	19 50
IX, 14x20, "	15 50	IC, 14x20	12 00
IC, 20x28, "	26 00	IC, 14x20, Coke Lead	12 00
IX 20x28, Terne	31 00		

Block Tin.
Large Pigs.....38c | Bars.....40c
Small " 39c

Sheet Zinc.
Casks.....₩ lb 10½c | Sheet.....₩ lb 11c

Solder.
No. 1, Refined, in bars or plate.....28c
No. 2, " " " 23c
Pig Lead.....8c

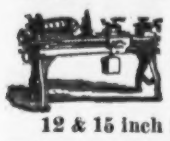
Sheet Copper.—18 to 100 lbs. Sheets 30x60.....32c
14 to 16 lbs., Sheets 30x60.....35c
10 to 12 lbs., " and 30x72.....38c
6 to 9 lbs., " 41c
Tinned, 14 and 16 oz. 14x48.....36c
Planished, 14 and 16 oz. 14x48.....41c
" No. 7, 8 and 9.....43c
Copper Bottoms.....37c

Sheet Iron.—

	Comn'n	Sin'th.	Char'l. J'nis.
No. 16 to 20	5½c	6c	8¼c 10¼c
No. 22 to 24	5¾c	6c	8¾c 10¾c
No. 26	6c	6¼c	8¾c 10¾c
No. 27	6¼c	6¾c	9¾c 10¾c

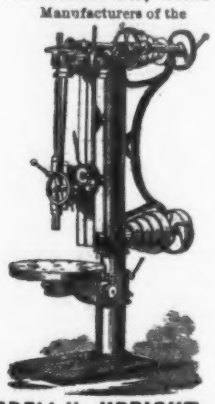
Galvanized Iron.....dis 10 %
Iron Rivets.....dis 15 %
Iron Wire.....dis 30 %
Copper & Market Wire.....dis 25 %
Copper Rivets and Burs.....dis 0 %
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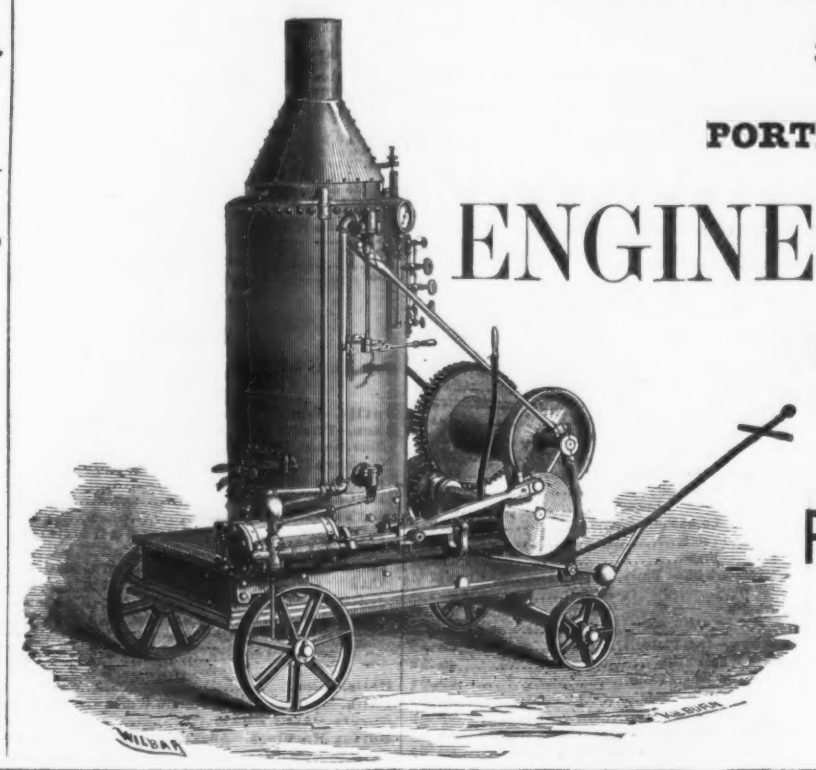
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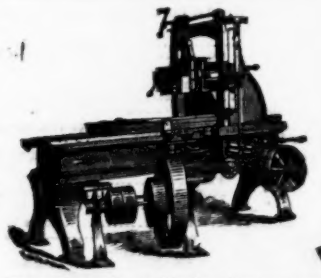
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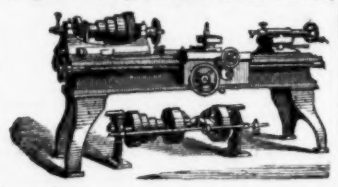
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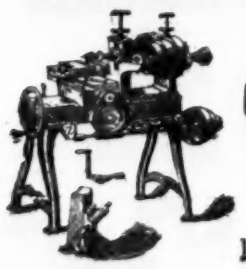
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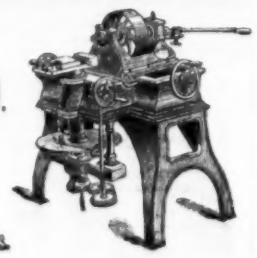
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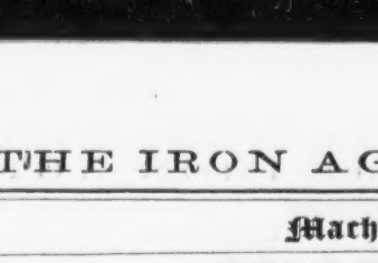
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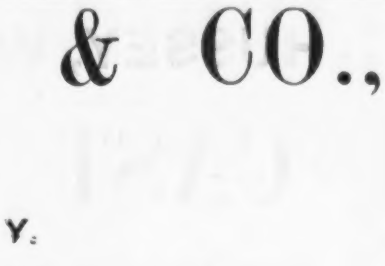


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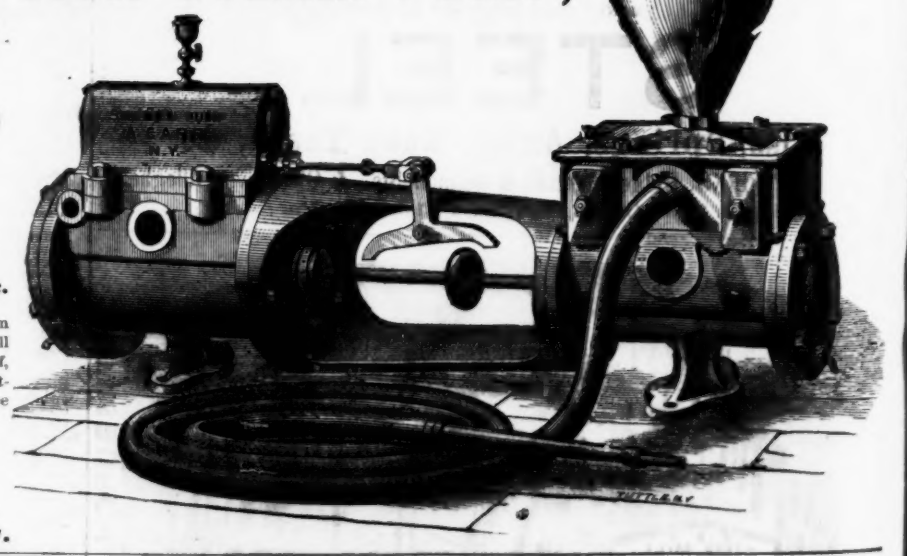
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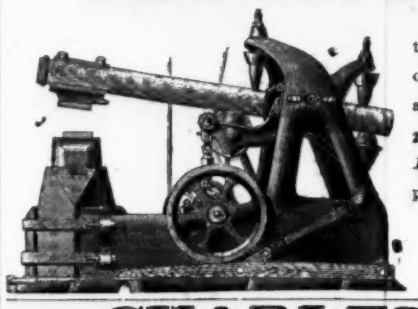
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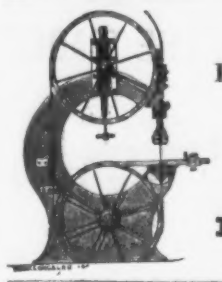
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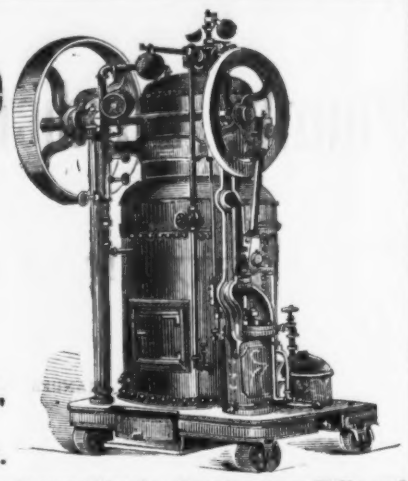


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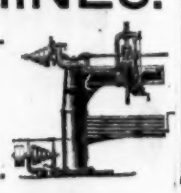
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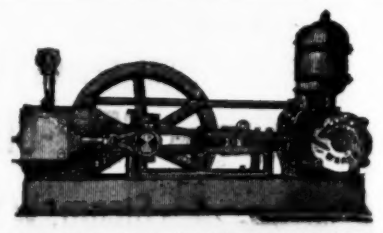


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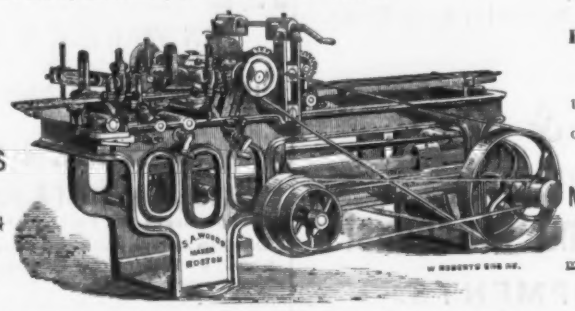
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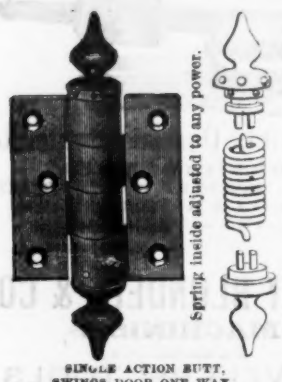
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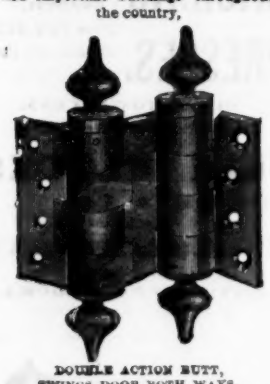
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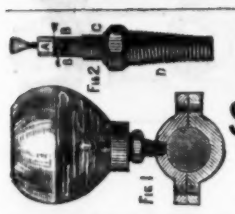
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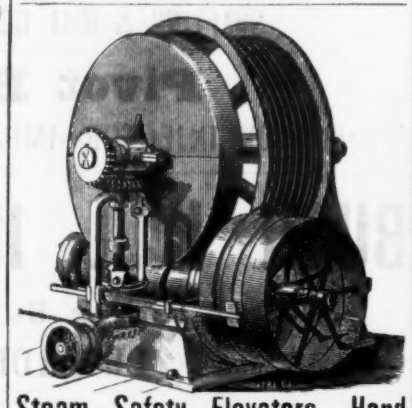
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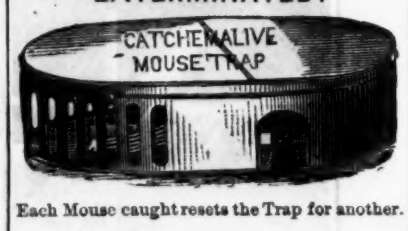
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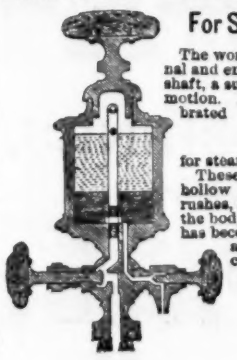
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